AGENDA

CALIFORNIA TRAFFIC CONTROL DEVICES COMMITTEE (CTCDC)
May 29, 2008 Meeting
100 Van Ness Avenue, San Francisco, CA 94102
TIME 9:00 AM

Organization Items

1 Introduction
2 Membership
3 Approval of Minutes (January 31, 2008 Meeting)
4 Public Comments
At this time, members of the public may comment on any item not appearing on the agenda. Matters presented under this item cannot be discussed or acted upon by the Committee at this time. For items appearing on the agenda, the public is invited to make comments at the time the item is considered by the Committee. Any person addressing the Committee will be limited to a maximum of five (5) minutes so that all interested parties have an opportunity to speak. When addressing Committee, please state your name, address, and business or organization you are representing for the record.

Agenda Items

5 Public Hearing
Prior to adopting rules and regulations prescribing uniform standards and specifications for all official traffic control devices placed pursuant to Section 21400 of the California Vehicle Code (CVC), the Department of Transportation is required to consult with local agencies and hold public hearings.

08-6	Proposal to adopt "NO HYBRID DECALS EXCEPT CARPOOLS -WHITE DMV CLEAN AIR DECAL VEHICLES OK" R93B(CA) Sign (Requested By Caltrans) [P 5-6]	(Continued) (Henley)
08-8	Traffic Actuated signals for the Bicycles and Motorcycles (Required due to AB 1581) [P 7-10]	(Continued) (Henley)
08-9	Proposal to amend policies for the STOP sign and Boundary City Limit signs (Requested by the CTCDC) [P 10-16]	(Continued) (Henley)
08-10	Proposal to adopt "WATCH FOR STOPPED VEHICLES" sign (Requested by Caltrans) [P 17-19]	(Continued) (Henley)
08-14	Proposal to amend recommendations made by the CTCDC in regards to Section 2B.13 Speed Limit Sign (R2-1) of CA MUTCD (Requested by the City of San Jose) [P 20-26]	(Introduction) (Henley)
08-15	Proposal to amend Fire Station SG38 (CA) & SG39 (CA) signs (Requested by Caltrans) [P27-29]	(Introduction) (Henley)
08-16	Proposal to amend Section 7B.11 & 7B.12 0f CA MUTCD due to AB321 (Requested by Caltrans) [P 30-35]	(Introduction) (Henley)

08-17	Proposal to amend Sections 2D.45 to add Ethanol {E(85)} General Services sign (Requested by Caltrans) [P 36-40]	(Introduction) (Henley)
08-18	Proposal to adopt "NO IDLING COMMERCIAL VEHICLES & SCHOOL BUSES" (Request Submitted by Air Resource Department) [P 42-47]	(Introduction) (Henley)

6 Request for Experimentation

08-19	Proposal to Experiment with Internally Illuminated Directional Turn Signs (IDTS) (Request submitted by the City of Pismo Beach) [P 48-53]	(Introduction) (Henley)
08-20	Request to Experimentation with Flashing Yellow Arrow for Permissive Right Turn Movement (Requested by the Marin Co.) [P 54-57]	(Introduction) (Mansourian)
08-21	Proposal to Experiment with Regulatory Sign "Bike May Use Full Lane" (Requested by Caltrans District 5) [P 58-60]	(Introduction) (Henley)

7 Discussion Items

08-12	Report Drunk Drivers – CALL 911 Signs [P 61-62]	(Continued) (Henley)
08-13	MUTCD 2003 Revision No. 2 Maintaining Traffic Sign Retroreflectivity [P 63-69]	(Continued (Henley)
08-22	Proposal to Amend CA MUTCD Section 10C.15 & 10C.23 (Request submitted by the City of San Francisco) [P 70-72]	(Introduction) (Wong)
08-23	Worker Visibility [P 73-76]	(Introduction) (Henley)

8 Information Items

06-8	FHWA's Interim Approval for Optional Use of Flashing Yellow Arrow, Traffic Control Devices [P 77]	(Continued) (Mansourian)

9 Tabled Item

06-7	MUTCD 2003 Revision No. 1 (Pharmacy Signing) (Proposed to Adopt Pharmacy Signing in CA)	(Continued) (Henley)
07-17	Proposal for C17A (CA) ROAD WORK Plaque and Amendment to CA MUTCD Section 6F.104 (Requested By Caltrans)	(Continued) (Henley)

10 Next Meeting

11 Adjourn

ITEM UNDER EXPERIMENTATION

01-9	IN-ROADWAY WARNING LIGHTS AT R/R CROSSINGS (Proposed by the CPUC in cooperation Kern Co. & City of Fresno)	(Henley)
04-9	Request to Experiment with "Watch The Road" Sign (Proposed by the Los Angles DOT)	(Bahadori)
04-10	Slow for the Cone Zone Sign (Proposed by Caltrans)	(Henley)
04-12	Requests for experimentation with "Flashing Yellow Arrows" (Proposed by the City of Fullerton and Pasadena)	(Bahadori)
05-10	Proposal for the Watershed Boundary Signs (Proposed by the San Diego)	(Henley)
06-2	Experiment with Colored Bike Lane (Proposed by the City of San Francisco)	(Banks)
06-5	Clear The Way Signage (Drive Damaged Vehicle to Shoulder) (Proposed by the CHP and MTC)	(Whiteford)
07-19	Wildlife Corridor Signage (Proposed by the County of San Bernardino)	(Babico)
08-7	Request for Experimentation with new Warning Sign for Bicyclists (Proposed by the City/Co of San Francisco)	(Wong)

STATUS OF CALTRANS ACTION ON PAST ITEMS

01-1 U-TURN SIGNAL HEADS INDICATOR

02-15 Radar Guided Dynamic Curve Warning Sign

03-14 Numbering of Signalized Intersections

06-9 Proposal to adopt G12-1 (CA), G12-2 (CA), S22-1 (CA) and C43 (CA) signs

06-12 No Parking Signs

07-1 Proposal to revise the sizes for the Supplemental School Plaques (S4-3, W16-7p and W16-9p)

07-2 Three (3) Proposed Roadway Regulatory Signs

07-5 Proposal to Amend Section 2C.29 Advance Traffic Control Signs (W3-1, W3-2, W3-3, W3-4)

07-6 Delete the symbolic NO TURN ON RED (R10-11) sign

07-11 Veterans National Cemetery Signs

07-15 Proposal to Adopt "Safety Awareness Zone Next XX Miles"

07-12 Amendment to CA MUTCD Section 4E.08 Pedestrian Detectors

07-13 Experimental Process With New Traffic Control Devices

07-14 Process to Adopt Interim Approvals in California Issued by the FHWA

07-18 Proposal to Amend "FWY Detour With Arrow" SC9 (CA) Sign and Adopt "Exit With Arrow Sign"

08-1 Amendment to CA MUTCD Section 2B.112(CA) Daylight Headlight Signs (S30(CA)

08-2 Amendment to Handicap parking Signs and Striping

08-3 Amendment to CA MUTCD Section 4D.17 Visibility, Shielding, and Positioning of Signal Faces

08-4 Bus Preferential Signs

08-5 No Double - Parking Anytime Commercial Vehicles Signs

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08-6 Proposal to adopt "NO HYBRID DECALS EXCEPT CARPOOLS-WHITE DMV CLEAN AIR DECALS VEHICLES OK" R93B(CA) Sign (P5-6)

Background:

Currently the carpool lane does allow vehicles with "white decals" and "yellow decals". White decals are issued to vehicles which use "natural gas and electric", yellow decals are issued to vehicles which use "gasoline and electric". Due to the fact that carpool lanes get congested, federal law requires that Caltrans prohibit the use of carpool lanes by vehicles with yellow decals. This is a contingency plan so that when Caltrans is ready to prohibit hybrid (gasoline and electric yellow decals) vehicles from using the carpool lanes, they could use this sign.

There was no consensus on the proposed sign at the January 31, 2008 meeting and the Committee suggested that Caltrans develop a sign which is clearly understandable to motorists. The following sign have been developed for the Committee's consideration:

Proposal:
Caltrans recommends adding the following sign into the Section 2B.26 Preferential Only Lane Signs (R3-10 through R3-15) of CA MUTCD:

Proposed New R93B(CA) Sign
36" X 30" with 3" B-Series Letters

1.875" Radius, 0.750" Border, 0.500" Indent, Black on White;
"NO HYBRID DECALS" B; "EXCEPT CARPOOLS" B; "WHITE DMV CLEAN AIR" B 50% spacing;
"DECAL VEHICLES OK" B;

PROPOSED POLICY STATEMENT:

Standard:

The NO HYBRID DECALS EXCEPT CARPOOLS, WHITE DMV CLEAN AIR DECAL VEHICLES OK R93B(CA) sign shall be used in advance of segment of a carpool lane and along the carpool lane as needed to prohibit single occupant hybrid vehicles with yellow DMV decals from using the HOV facility, while still permitting vehicles displaying a white DMV clean air decal to use the lane. A supplemental panel showing the distance to the prohibited segment should be used under the R93B(CA) when used in advance of a prohibited segment.

Existing R93A(CA) Sign
(36" x 15", not shown to scale in comparison to the above proposal)

Note: The existing policy will still apply for both yellow and white DMV decals, for hybrids.

08-8 Traffic Actuated Signals for the Bicycles and Motorcycles (P7-10)

Background:

During the January 31, 2008 CTCDC meeting, the Committee formed a Sub Committee to develop guidelines for the bicycle/motorcycle detection system at the signalized intersections for the inclusion into the CA MUTCD. The Sub Committee has discussed and approved the following items which would be included into the final guidelines and Sub Committee requests recommendation from the CTCDC:

1. Bicycle/motorcycle detection shall be performance based

2. Bicycle/motorcycle detection shall be technology-independent

3. "Design Vehicle" is defined as a minimum 4' tall person, weighing minimum 90 lb, riding on an unmodified and non-ferromagnetic minimum 16" wheels bicycle, with aluminum rims, stainless steel spokes, and head light

4. "Detection Zone" in a signalized intersection is defined as a 6' X 6' area behind the limit line or stop bar, centered in the lane, where the design vehicle shall be detected anywhere within the 6' X 6' area at an accuracy level of 95 percent or better

5. If the lane is wider than 12', then the left edge of the detection zone shall be 3' from the lane line

6. The design vehicle shall be used to determine the accuracy level of 95 percent or better under the following conditions:

    - A new detection system has been installed
    - The detection configuration has been modified
    - A complaint has been made about lack of detection by bicyclists/motorcyclists

7. Bicycle/pedestrian push buttons shall be used in areas where it is not feasible to establish any detection, permanent phase recall, or fixed time operation

8. The detection zone is not required for phases that are on permanent recall or fixed time operation

9. Signalized intersections may use multiple (hybrid) detection technologies to detect bicycles and motorcycles

10. Traffic signal operation engineers may extend the minimum green interval to provide additional crossing time when feasible

11. When the full 6' X 6' detection zone cannot be established, the Bicycle Detector Symbol (BDS) shall be installed to indicate the best possible detection area for the bicyclists/motorcyclists to stop

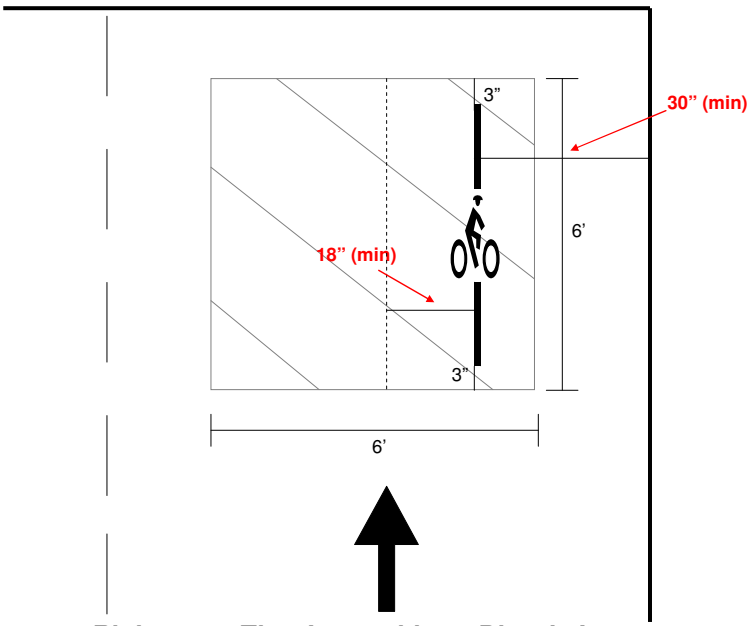
12. The installation of the BDS is recommended to enhance bicycle/motorcycle detection

13. The following standards should apply for the installation of the BDS (see Figures 1-3):

    - The BDS should be installed for the right-most through lane when a bicycle lane is absent.

- The BDS should be installed for the right-most left turn lane
- The BDS should not be placed less than 30" from shared lane lane-line for the right-most thru or the left turn lanes
- The BDS should not be placed less than 18" from the center of the shared lane, in order to avoid oil slicks
- When a bicycle lane is present, the BDS should be in the center of the bicycle lane instead of the thru lane. The BDS should not be placed less than 18" or more than 42” from the left side of the bicycle lane striping

Figures



Right-most Thru Lane without Bicycle Lane

Figure 1

Not to Scale

08-9 Proposal to amend policies for the STOP and Boundary (City Limit) Signs (P10-16)

Background:

Johnny stated that generally the MUTCD and CA MUTCD discourage the installation of two signs on the same post. He stated that there are signs, e.g., one-way sign, divided highway signs that are placed with a stop sign. Sometimes route shield signs have supplemented with directional signs. He stated that since the Stop sign is the main message, it shall be on top of the post. Johnny Bhullar stated that it will require changing the policy for stop signs.

Johnny further added that the CA MUTCD is not consistent in regards to the city/county limit signs. There are two policies, one for unincorporated limits, it says the sign "shall" be at the limit line, however for the county boundaries it says the sign "should" be at boundary lines.

The Committee suggested that Caltrans bring an amended Stop sign policy which addresses this ambiguity.

The Committee also recommend that Caltrans bring revised policy with "should" conditions that city limit signs should be placed as close to the limit line as practical.

Proposal: The following is an amended policy for the Stop sign and for the boundary limit signs:

Section 2A.16 Standardization of Location
Guidance:
Signs should be located on the right side of the roadway where they are easily recognized and understood by road users. Signs in other locations should be considered only as supplementary to signs in the normal locations, except as otherwise indicated.
Signs should be individually installed on separate posts or mountings except where:
A. One sign supplements another, or
B. Route or directional signs are grouped to clarify information to motorists, or
C. Regulatory signs that do not conflict with each other are grouped, such as turn prohibition signs posted with one-way signs, street name signs posted with a stop or yield sign, or a parking regulation sign posted with a speed limit sign.

Standard:
If other signs are grouped with a STOP sign, they shall be installed below the STOP sign.
Guidance:

Section 2B.06 STOP Sign Placement
Standard:
The STOP sign shall be installed on the right side of the approach to which it applies. When the STOP sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.29) shall be installed in advance of the STOP sign.
The STOP sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.
STOP signs and YIELD signs shall not be mounted on the same post.
If other signs are grouped with a STOP sign, they shall be installed below the STOP sign.
Guidance:
Other than a DO NOT ENTER sign, no sign should be mounted back-to-back with a STOP sign in a manner that obscures the shape of the STOP sign.
Support:
Section 2A.16 contains additional information about separate and combined mounting of other signs with STOP signs.

Section 2C.50 CROSS TRAFFIC DOES NOT STOP Plaque (W4-4p)

Option:

The CROSS TRAFFIC DOES NOT STOP (W4-4p) plaque (see Figure 2C-8) may be used in combination with a STOP sign when engineering judgment indicates that conditions are present that are causing or could cause drivers to misinterpret the intersection as an all-way stop.

Alternate messages such as TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP or ONCOMING TRAFFIC DOES NOT STOP may be used on the W4-4p plaque when such messages more accurately describe the traffic controls established at the intersection.

Standard:

If the W4-4p plaque is used, it shall be installed below the STOP sign.

Section 2I.05 TRAFFIC CONTROL POINT Sign (EM-3)

Standard:

The standard STOP (R1-1) sign shall be used in conjunction with the TRAFFIC CONTROL POINT sign. The TRAFFIC CONTROL POINT sign shall consist of a black legend and border on a retroreflectorized white background.

Guidance:

The TRAFFIC CONTROL POINT sign should be mounted directly below the STOP sign.

Figure 2B-12. Examples of Locations of ONE WAY Signs
(Sheet 1 of 2)

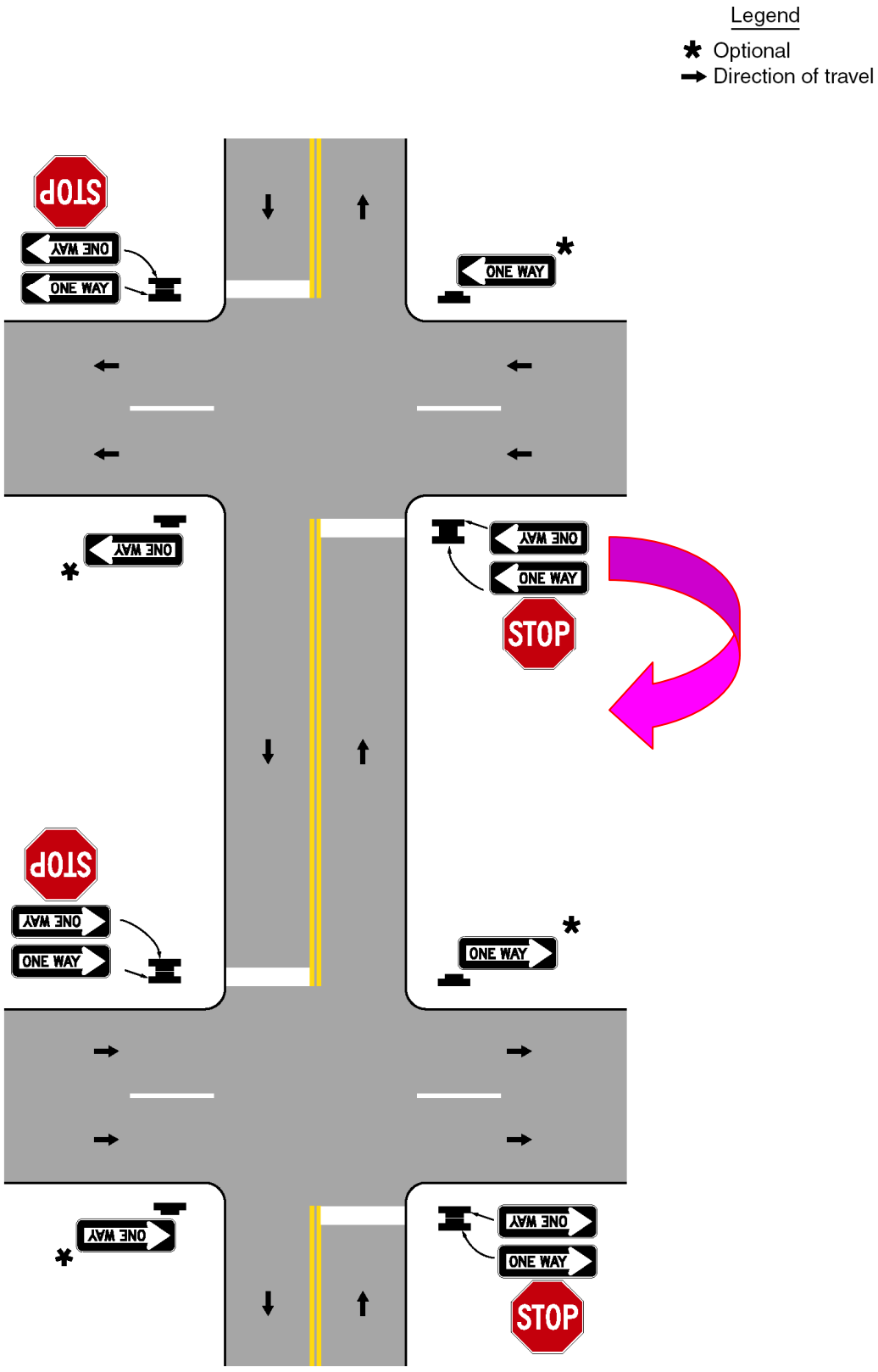


Figure 2B-12. Examples of Locations of ONE WAY Signs
(Sheet 2 of 2)

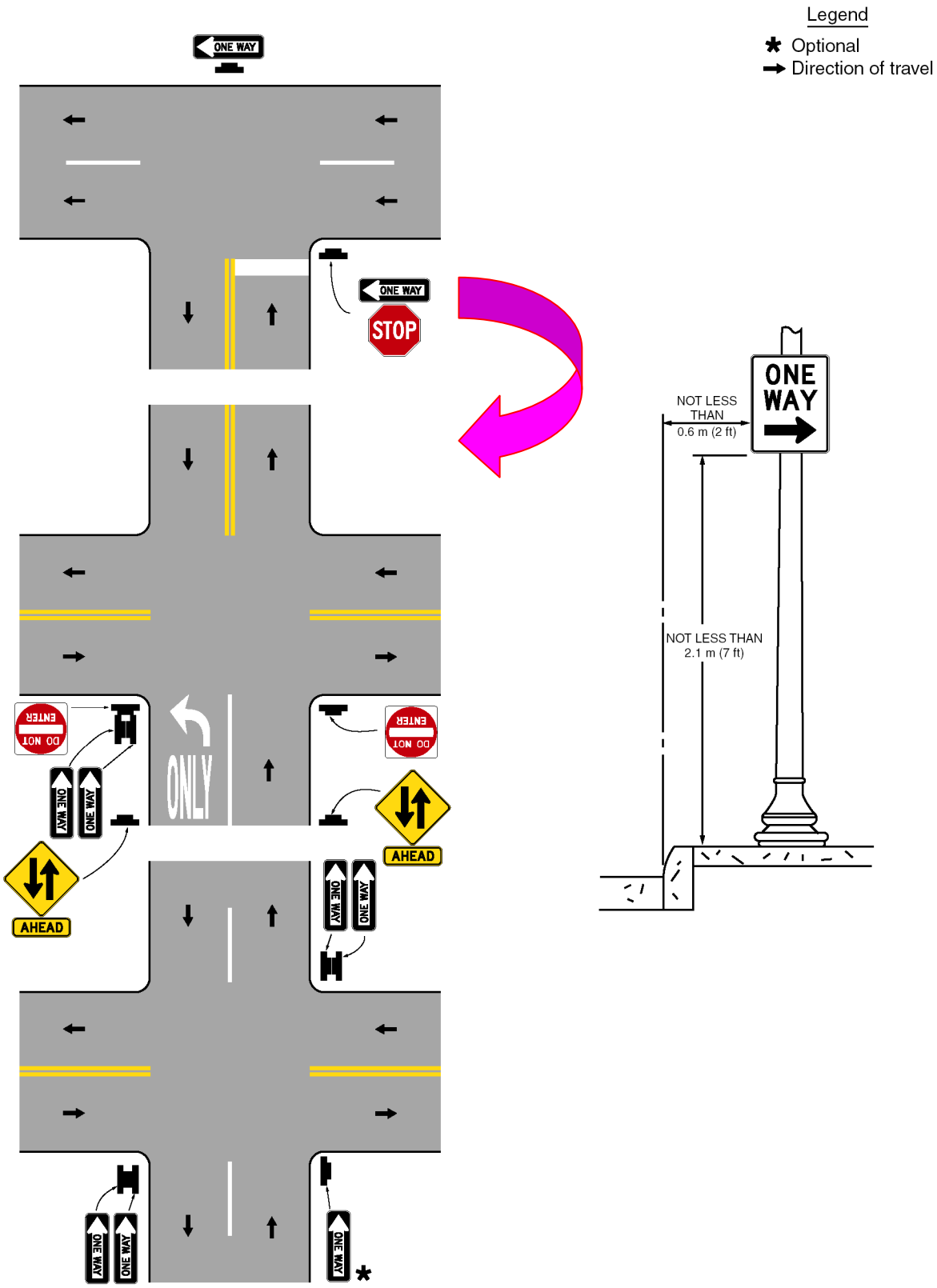
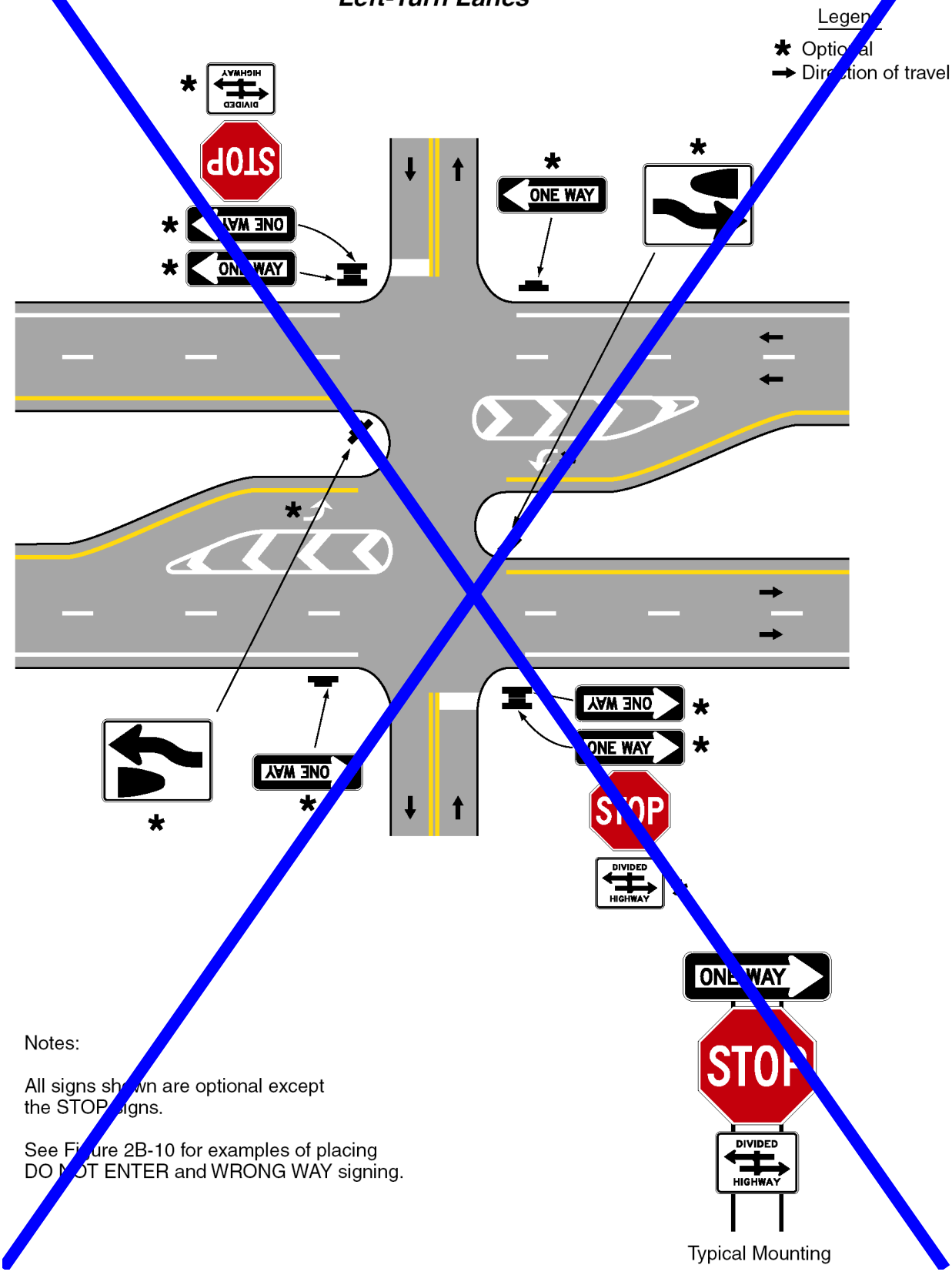


Figure 2B-15. Examples of ONE WAY Signing for Divided Highways with Medians Less Than 9 m (30 ft) and Separated Left-Turn Lanes



Section 2D.48 General Information Signs (I Series)

Unincorporated Community and City Limit (CA Code G9-2 and G9-5) Signs

Standard:

The Unincorporated Community (G9-2(CA)) and City Limit (G9-5(CA)) signs shall be used to mark the limits of cities and to identify unincorporated towns. ~~The G9-5 (CA Code) sign shall be placed on the right, at the outer city limits of incorporated cities, facing traffic entering the named city. The G9-2(CA) sign shall be used similarly for unincorporated towns.~~

Guidance:

The G9-2(CA) signs should be placed on the right, as close as practical to the outer town limits of unincorporated towns, facing traffic entering the named town.

The G9-5(CA) sign should be placed on the right, as close as practical to the outer city limits of incorporated cities, facing traffic entering the named city.

Option:

The population may be obtained from:

A. Federal census
B. California Dept. of Finance
C. County Board of Supervisors
D. County Planning Commission

The elevation shown may be that of the courthouse, post office, railroad station, or benchmark in the central district of the city.

Standard:

See Section 101.1 of the Streets and Highways Code, which makes these changes mandatory, and Section 101.2 and 101.4, which provides that the Department of Transportation, under certain conditions, shall replace any city limit signs.

Guidance:

If a city or community desires to install a distinctive type city limits or "Welcome" sign on conventional highways at its city limits in place of the standard G9-5(CA) sign, the following criteria should be followed:

Standard:

1. **The signs shall be installed by local authorities at no expense to the State, and an approved encroachment permit will be obtained prior to installation. They shall be maintained by the permittee to the satisfaction of the permitter.**
2. **Such signs shall be installed in accordance with current Department practices.**
3. **Signs shall be of reasonable size and proportional to other guide signs in the area.**
4. **Signs shall be positioned so they do not obstruct the view of official traffic control devices.**
5. **No moving or flashing displays or advertising of any kind will be permitted.**
6. **No sign shall encroach over the highway.**

Option:

7. Political jurisdiction logos may be displayed on the city limit signs, but the predominant characteristics of the sign will be white legend on a green rectangular shaped background. Distinctive type city limit signs not conforming to the above may remain in place until normal replacement is required.

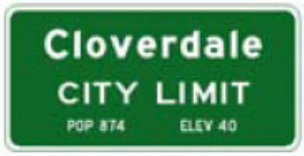
County Line (G10(CA)) Sign

Guidance:

The County Line (G10(CA)) sign should be used at the point where the county boundary line crosses the State highway. ~~The G10(CA) sign should be placed on the right facing traffic entering the named county.~~

The G10(CA) sign should be placed on the right, as close as practical to the outer limits of the county, facing traffic entering the named county.

G9-2 (CA)



G9-5 (CA)

G10 (CA)

08-10 Proposal to adopt, "WATCH FOR STOPPED VEHICLES" sign (P17-19)

Background:

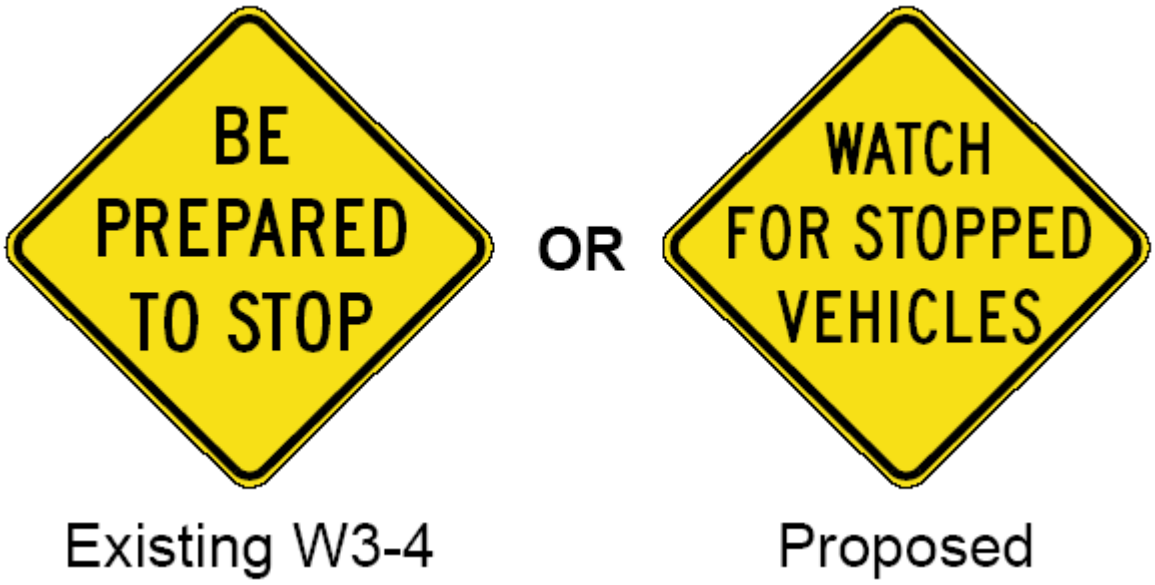
Caltrans District 8 is requesting the use a warning sign with the message "WATCH FOR STOPPED VEHICLES". They believe that the "WATCH FOR STOPPED VEHICLES" sign gives a much clearer message to motorists as compared to the "BE PREPARED TO STOP" sign. The former sign is an advisory for motorist to be aware of the stopped vehicles in the roadway condition while the latter may mean to the motorists that they have to stop for some other reason like a sobriety check point or Agriculture Station or Homeland Security check point.

John Fisher stated that he supports the idea, because the "Be Prepare To Stop" sign has a different meaning as the "Watch For Stopped Vehicles" sign.

Committee members unanimously recommended placing this item on the agenda under Public Hearing Items for the next meeting.

Proposal:

Caltrans recommends adopting "WATCH FOR STOPPED VEHICLES' sign as an alternative sign to the "BE PREPARED TO STOP" sign. Following is the proposed alternative sign and policy (in red), including the manner in which it could be incorporated into the CA MUTCD:



Section 2C.29 Advance Traffic Control Signs (W3-1, W3-2, W3-3, W3-4)

Option:

A warning beacon may be used with an Advance Traffic Control sign.

A BE PREPARED TO STOP (W3-4) sign (see Figure 2C-4) or WATCH FOR STOPPED VEHICLES (WXX(CA)) sign (see Figure 2C-4(CA)) may be used to warn of stopped traffic caused by a traffic control signal or in advance of a section of roadway that regularly experiences traffic congestion.

Standard:

When a BE PREPARED TO STOP sign or WATCH FOR STOPPED VEHICLES sign is used in advance of a traffic control signal, it shall be used in addition to a Signal Ahead sign.

~~Option:~~

~~The BE PREPARED TO STOP sign may be supplemented with a warning beacon (see Section 4K.03).~~

~~Guidance:~~

~~When the warning beacon is interconnected with a traffic control signal or queue detection system, the BE PREPARED TO STOP sign should be supplemented with a WHEN FLASHING plaque.~~

Standard:

A warning beacon or WHEN FLASHING (W16-13p) plaque shall not be used to supplement the BE PREPARED TO STOP (W3-4) sign or WATCH FOR STOPPED VEHICLES (WXX(CA)) sign. Studies indicate that these devices are generally not effective as warning devices for motorists approaching signalized intersections. The non-use of a warning beacon or WHEN FLASHING (W16-13p) plaque also addresses the situation when a warning beacon is inoperative for any reason.

Guidance:

The Stop Ahead sign (W3-1) should not be used in the approach to an intersection where there is channelization and the majority of the traffic turns to the right without being required to stop.

Option:

The STOP AHEAD pavement markings may be placed in accordance with Section 3B.19.

The SIGNAL AHEAD sign (W3-3a) may be used for overhead mastarm and overhead structure mounted locations.

The SIGNAL/STOP AHEAD Arrow sign (SW26(CA)) may be used in the head-on position where W3-1 and W3-3 signs have proven ineffective.

Guidance:

The W3-1 and W3-3 signs should be left in place when the SW26(CA) sign is placed.

Support:

See Figure 2C-4(CA) for W3-3a sign.

Following are examples of other warning signs in the CA MUTCD which use the word "WATCH" in their message, as an extra aid to facilitate discussion:

<u>Section 2C.27 Slippery When Wet Sign (W8-5)</u>

Option:

The WATCH FOR SNOW SLIPPERY (SW46(CA)) sign may be used to warn road users of conditions where snow may be on the roadway surface, but chains are not yet required. The SW46(CA) sign may be placed in advance of areas where such conditions may exist, and intermittently as needed where such conditions may exist for long sections of highways.

The SW46(CA) sign may be displayed when weather conditions are such that it would be reasonable to assume that snow on the roadway would be a possibility.

Guidance:

The SW46(CA) sign should be removed when such conditions are no longer present.

Support:

See Figure 2C-4(CA) for the SW46(CA) sign.

<u>Section 2C.40 Vehicular Traffic Signs (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12p, W11-14)</u>

Option:

The WATCH FOR SNOW REMOVAL EQUIPMENT (SW58(CA)) sign may be used on highways leading to snow areas.

Guidance:

The SW58(CA) sign should be covered or removed during the summer season.

Support:

The SW58(CA) sign is normally placed at lower elevations where the first snow is usually encountered.

Support:

See Figure 2C-9(CA) for the SW47(CA), SW52(CA) and SW58(CA) signs.

Section 2C.48 Hill-Related Plaques (W7-2 Series, W7-3 Series)

Option:

The WATCH DOWNHILL SPEED (SW4-1(CA)) sign may be used on long downhill grades to remind motorists to maintain the posted speed.

08-14 Proposal to amend recommendations made by the CTCDC in regards to Section 2B.13 Speed Limit sign (R2-1) of CA MUTCD (P20-26)

Background:

During the January 31, 2008 CTCDC meeting, the Committee recommended that Caltrans adopt the revised language of Section 2B.13 Speed Limit Sign (R2-1) into the CA MUTCD. Caltrans has received 14 letters from the local police departments and from the City of San Jose in the opposition to the recommended policy proposed by the CTCDC.

The CTCDC recommendations are as follows:

Section 2B.13 Speed Limit Sign (R2-1)

Standard:

After an engineering study has been made in accordance with established traffic engineering practices, the Speed Limit (R2-1) sign (see Figure 2B-1) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency. The speed limits shown shall be in multiples of 10 km/h or 5 mph.

Guidance:

At least once every 5, 7 or 10 years, ~~States~~ State and local agencies should reevaluate non-statutory speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review (see CVC 40802).

No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

Standard:

When a speed limit is to be posted, it ~~should~~ shall be within ~~established at the nearest~~ 10 km/h or 5 mph ~~increment~~ of the 85th-percentile speed of free-flowing traffic, except as shown below in the option.

Option:

The posted speed may be reduced by 10 km/h (5 mph) from the ~~nearest~~ 10 km/h or 5 mph increment of the 85th-percentile speed~~, where engineering study indicates the need for a reduction in speed to match existing conditions with the traffic safety needs of the community~~ if unusual conditions not readily apparent to drivers, such as significantly higher collision rates or other factors exist, as long as those conditions are in compliance with all the appropriate sections of the CVC, especially CVC Sections 627 and 22358.5.

Standard:

If used, a one-time 10 km/h or 5-mph reduction, according to CVC sections 627 and 22358.5, shall be documented in writing. The final, posted speed limit shall not be less than the 50th-percentile speed.

Proposal:
The City of San Jose recommends for adoption of the following language (in grey) in lieu of the CTCDC proposed language:

Section 2B.13 Speed Limit Sign (R2-1)

Standard:

After an engineering study has been made in accordance with established traffic engineering practices, the Speed Limit (R2-1) sign (see Figure 2B-1) shall display the limit established by law, ordinance, regulation, or as adopted by the authorized agency. The speed limits shown shall be in multiples of 10 km/h or 5 mph.

Guidance:

At least once every 5, 7 or 10 years, States State and local agencies should reevaluate nonstatutory speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review (see CVC 40802).

No more than three speed limits should be displayed on any one Speed Limit sign or assembly.

Standard:

When a speed limit is to be posted, it ~~should~~ shall be within ~~established at the nearest~~ 10 km/h or 5 mph ~~increment~~ of the 85th-percentile speed of free-flowing traffic, except as shown below in the option.

Option:

The posted speed may be reduced by 10 km/h (5 mph) from the ~~nearest~~ 10 km/h or 5 mph increment of the 85th-percentile speed, ~~where engineering study indicates the need for a reduction in speed to match existing conditions with the traffic safety needs of the community~~ if unusual conditions not readily apparent to drivers, such as significantly higher collision rates or other factors exist, as long as those conditions are in compliance with all of the appropriate sections of the CVC, especially CVC Sections 627 and 22358.5.

Standard:

If used, a one-time 10 km/h or 5-mph reduction, according to CVC sections 627 and 22358.5, shall be documented in writing.

Guidance:

The final, posted speed limit ~~shall~~ should not be less than the 50th-percentile speed, unless there are unusual conditions not readily apparent to drivers, such as significantly higher collision rates or other factors exist, as long as those conditions are in compliance with all of the appropriate sections of the CVC, especially CVC Sections 627 and 22358.5.

Attachments:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Department of Transportation

JAMES R. HELMER - DIRECTOR

April 17, 2008

Robert Copp
Division Chief of Traffic Operations
Department of Transportation, MC 36
1120 N Street
Sacramento, CA 95814

Subject: CTCDC Agenda Item 07-16, SB848, as Amended, Corbett. Vehicles: Engineering and Traffic Survey: Speed Trap.

Dear Mr. Copp,

This letter is a follow-up to the conference call Robert Davis, San Jose's Police Chief, Roxanne Miller, from San Jose's Intergovernmental Office, and I had with yourself and Wayne Henley on April 9 regarding amendments proposed by the California Traffic Control Devices Committee (CTCDC) on how speed limits are established in California.

We are appreciative of the April 11 letter from Wayne Henley that included the exact language proposed by the CTCDC. As discussed during our call, Caltrans will send this information to all Public Works Directors and Traffic Engineers of Cities and Counties in California. The final language will be helpful to all cities and counties in California as it is somewhat different from what was contained in prior communications.

Regarding the Question and Answer material that was attached to the April 11 letter, it appears that 'residence districts' and 'local streets' are being treated interchangeably. We request further clarification from Caltrans or the CTCDC on this issue as well. San Jose's position, based upon a review of the California Vehicle Code (CVC) by our legal counsel, is that a 'residence district' roadway is not necessarily a 'local street'. Based upon this, a 25 MPH prima facie speed limit that is provided under CVC 22352 is a 'speed trap', unless it is supported by an Engineering and Traffic Survey (ETS). Local streets, roads, or schools zones are exempted from this requirement.

San Jose is appreciative that Caltrans is providing opportunity for further discussion of this very important subject at the May 29 CTCDC meeting. My April 7 letter (copy attached) raised some key issues that need to be addressed and it is recommended that they be discussed at the upcoming CTCDC meeting. San Jose also recommends that the discussion topic be included on the May 29 CTCDC Agenda under the Public Hearing section.

As indicated in my April 7 letter, San Jose supports posting speed limits close to what a majority of motorists are traveling and that local agencies should have the flexibility to reduce the posted

speed limit based on the provisions contained in CVC 627. Establishing a 50th percentile speed floor substantially removes the use of engineering judgment in setting appropriate speed limits (especially on 25 and 30 MPH local streets) and results in significantly less flexibility than existing state law. San Jose requests that the CTCDC reconsider its proposed modifications and suggests that the attached alternate proposed changes be considered.

Please contact Laura Wells in our department if you have any questions regarding the above information. Laura can be reached at 408-975-3725.

JAMES R. HELMER
Director of Transportation

C: William Kempton, Caltrans
Wayne Henley, Caltrans
Devinder Singh, CTCDC Secretary
Betsy Shotwell, CSJ Intergovernmental Office
Robert Davis, Chief of Police, SJPD

Attachments

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Department of Transportation

JAMES R. HELMER - DIRECTOR

April 7, 2008

Robert Copp
Division Chief of Traffic Operations
Department of Transportation, MC 36
1120 N Street
Sacramento, CA 95814

Subject: CTCDC Agenda Item 07-16, SB848, as Amended, Corbett. Vehicles: Engineering and Traffic Survey: Speed Trap.

Dear Mr. Copp,

This letter is a follow-up to my December 20, 2007 letter and the California Traffic Control Devices Committee (CTCDC) recommendations that were finalized at their January 31, 2008 meeting and contained in the minutes of that meeting.

First, I would like to thank you for your January 28, 2008 response to San Jose's letter. I was encouraged that the California Department of Transportation shared the view that the final CTCDC proposal would provide flexibility to all jurisdictions in establishing safe, rational, and enforceable speed limits. Your letter also indicated that the changes proposed by the CTCDC would require a thorough review to assess statewide impacts. As expressed previously, San Jose would like to be involved in this review process.

As outlined in the minutes of the January 31, 2008 CTCDC meeting, San Jose continues to be concerned with the establishment of an arbitrarily set floor for setting posted speed limits in California. We believe that doing so would negatively impact not only San Jose, but numerous other local agencies throughout California. As indicated in my December 20, 2007 letter and San Jose's (and other cities) comments at the January CTCDC meeting, establishing an arbitrary 50th percentile floor removes flexibility from local agencies beyond what is currently contained in the CA MUTCD, and is significantly less flexible than what was contained in the prior Traffic Manual. Specifically, the proposed changes will:

- Substantially remove the option for engineers to consider highway, traffic and roadside conditions not apparent to the motorist. Conditions such as high crash rates, visibility constraints, lack of sidewalk, and consistent speed zoning would have no bearing on the establishment of a speed limit on many roadways throughout California.

- Engineers will be required to raise the posted speed limit above the 85th percentile speed on many roadways, especially lower speed (25 – 30 mph) residential roadways; with no consideration of high crash rates or unusual conditions.

- Convert the process of preparing Engineering and Traffic Surveys (E&TS) from one that is based on engineering judgment to a mathematical exercise.

- Substantially restrict the ability of local agencies to implement the provisions of Assembly Bill 321 providing for 15 mph prima facie school speed limits.

With increased posted speed limits required on many lower speed streets throughout California, local agencies will also be faced with responding to increased demands for enforcement and traffic calming measures. Due to budget constraints in most local agencies, these neighborhood expectations will be unmet.

Some key issues that need addressing in your suggested statewide review are the following:

1. The guidelines for preparing an E&TS in the CA MUTCD indicate that speed zoning should be in 10 mph increments except in urban areas where 5 mph increments are preferred. How should local agencies address speed zone increments of 15 mph that are created when the posted speed limit on a roadway must be increased under the CTCDC's proposed changes?

2. The CA MUTCD will contain many 'Standards' related to speed limits. Existing standards indicate that engineers shall consider all of the following when preparing an E&TS:

   - Prevailing speeds
   - Collision records
   - Highway, traffic and roadside conditions not readily apparent to the motorist

   The CTCDC has proposed the following new standards:

   - The posted speed limit shall be within 5 mph of the 85th percentile speed of free flowing traffic.
   - If a one-time 5 mph reduction is used, it shall be documented in writing. The final, posted speed limit shall not be less than the 50th percentile speed.

   Which of the above 'shall' standards takes precedence?

3. California Vehicle Code (CVC) Section 22352 indicates that a prima facie 25 mph speed limit is applicable in any business or resident district. Can radar be used for enforcement of speed limits on any roadway that meets the definition of a business or resident district?

Establishing appropriate speed limits on local roadways should be based on sound engineering judgment. San Jose agrees with the CTCDC that posted speed limits should be close to what a majority of motorists are traveling and that local agencies should have the flexibility to reduce the posted speed limit based on the provisions contained in CVC 627. However, establishing an artificial floor essentially eliminates the engineering aspect of completing an E&TS.

I appreciate the opportunity that Caltrans is providing for further discussion of this very important subject. Any changes to the setting of posted speed limits in California will have significant impacts across the State and is something that needs to be carefully and thoroughly considered. I look forward to speaking with you regarding the above concerns next week. Lt. Jeffrey Smith who manages San Jose's Traffic Enforcement Unit, Roxanne Miller in our Intergovernmental Office and Laura Wells on my staff will participate in the conference call.

JAMES R. HELMER
Director of Transportation

C: William Kempton, Caltrans
Devinder Singh, CTCDC Secretary
Betsy Shotwell, CSJ Intergovernmental Office
Robert Davis, Chief of Police, SJPD

08-15 Proposal to Amendment to Fire Station SG38 (CA), SG39 (CA) signs (P27-29)

Background: The current signs are as follows:

SG38 (CA)

SG39 (CA)

The California Department of Forestry and Fire Protection will be known as CAL FIRE instead of CDF. Due to the change, the current signs required modification to reflect the new name. The following are the revised signs based on the CAL FIRE name:

Proposal: Caltrans recommends for adoption of the revised signs as shown below:

Revised SG38 (CA)
Size Options:
Variable x 30" - same as existing SG38 (CA)
Variable x 36" - same as existing SG38 (CA)

Revised SG39 (CA)
Size Options:
Variable x 20" - same as existing SG39 (CA)
Variable x 30" - same as existing SG39 (CA)

Part of CA MUTCD, Section 2D.45 General Service Signs (D9 Series), revised text:

CAL FIRE Station Signs (SG38(CA) and SG39(CA))
Option:
The CAL FIRE STATION NEXT RIGHT (SG38(CA)) sign may be used on freeways in rural areas to give advance notice of an exit to a California Department of Forestry Fire Station which is within 0.8 km (0.5 mi) of the exit and is open 24 hours each day of the year.
The CAL FIRE STATION with Arrow (SG39(CA)) sign may be used in rural areas on expressways, conventional highways and freeway ramp terminals in advance of the turn off to a California Department of Forestry Fire Station which is within 0.8 km (0.5 mi) of the exit and is open 24 hours each day of the year.

Attachments:

CAL FIRE NEWS RELEASE

California Department of Forestry and Fire Protection

CONTACT: Daniel Berlant
Information Officer
(916) 651-FIRE

RELEASE DATE: January 24, 2007

State Fire Department to be known as CAL FIRE

Sacramento – CAL FIRE now will be used in reference to CDF and the California Department of Forestry and Fire Protection, Director Ruben Grijalva announced today. Assembly Bill 1423 went into effect January 1, 2007 allowing the California Department of Forestry and Fire Protection to be referred to as CAL FIRE where appropriate.

"The formal name of our department hasn't changed," said Director Grijalva. "Over the last 100 years our mission has become increasingly complex and the length of our full department name reflects that. The use of CAL FIRE incorporates all aspects of our department -- Fire Protection, Resource Management, and the Office of the State Fire Marshal."

The department's mission has not changed as CAL FIRE will continue to provide the same first rate emergency service and world renowned resource management to the residents of California with simply a new name. Just as the California Department of Transportation is better known as CalTrans, or the California Department of Boating and Waterways is known as Cal Boating, CAL FIRE will be used to reflect the full services provided by the California Department of Forestry and Fire Protection.

To minimize any unnecessary costs, the bill stipulates that no current materials, supplies, signs, insignias, decals or logos shall be destroyed or changed as a result of the authorization to use CAL FIRE. Once the old supplies are exhausted, new materials will be used.

CAL FIRE plans a formal rollout introducing the use of CAL FIRE in May during Wildfire Awareness Week. The name CAL FIRE is spelled out in two words with all capital letters. There is no hyphen or any other punctuation mark between the words.

CAL FIRE responds to over 350,000 incidents per year while protecting over 31 million acres of California.

CAL FIRE NEWS RELEASE

California Department of Forestry and Fire Protection

CONTACT: Daniel Berlant
Information Officer
(916) 651-FIRE (3473)

RELEASE DATE: May 4, 2007

MEDIA ADVISORY

Monday Capitol Event Will Kick Off Wildfire Awareness Week

New CAL FIRE Logo/Patch to be Unveiled at Ceremony

Sacramento - CAL FIRE will kick off Wildfire Awareness Week with a ceremony on the west steps of the State Capitol on Monday, May 7 at 10 a.m. The ceremony will feature an unveiling of the new logo/patch for CAL FIRE, which is the new identifier for the California Department of Forestry and Fire Protection, formerly know as CDF.

Governor Arnold Schwarzenegger has officially proclaimed May 6-12 Wildfire Awareness Week. Speakers at Monday's event will include CAL FIRE Director Ruben Grijalva, Deputy Director of Fire Protection Ken McLean, along with state officials and other dignitaries.

CAL FIRE's newest engines and emergency crew transports will be on display. The entire 10th Street block between N Street and L Street will be lined with a convoy of different CAL FIRE emergency vehicles. A flyover of CAL FIRE aircraft also is scheduled. There also will be several large displays to educate and encourage Californians to prepare for the upcoming fire season.

Following the kick-off ceremony, another public event will be held at a Cameron Park Fire Station in El Dorado County from 4 p.m. to 6 p.m. Homeowners and residents can learn about wildfire prevention from firefighters and possibly win free yard tools that have been donated by a local hardware store. The Cameron Park Station is located at 3200 Country Club Drive in Cameron Park just off U.S. Highway 50.

For more information on the events, visit www.fire.ca.gov.

08-16 Proposal to amend Sections 7B.11 and 7B.12 of CA MUTCD due to AB321 (P30-35)

Background:

AB 321, Nava. Vehicles: prima facie speed limits: schools.
(1) Existing law establishes a 25 miles per hour prima facie limit when approaching or passing a school building or the grounds thereof, contiguous to a highway and posted up to 500 feet away from the school grounds, with a standard "SCHOOL" warning sign, while children are going to or leaving the school either during school hours or during the noon recess period. The prima facie limit also applies when approaching or passing school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a standard "SCHOOL" warning sign. A violation of that prima facie limit is an infraction. Existing law allows a city or county, based on an engineering and traffic survey that the prima facie speed limit of 25 miles per hour is more than is reasonable or safe, by ordinance or resolution, to determine and declare a prima facie speed limit of 20 or 15 miles per hour, whichever is justified as the appropriate speed limit by that survey.

This bill would additionally allow a city or county to establish in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, a 15 miles per hour prima facie limit when approaching, at a distance of less than 500 feet from, or passing, a school building or the grounds thereof, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 15 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit would also apply when approaching, at that same distance, or passing school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with one of those signs. The bill would provide that a 25 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, applies, as to those local authorities, when approaching, at a distance of 500 to 1,000 feet from, one of those areas where children are going to or leaving the school, either during school hours or during the noon recess period, that is posted with a school warning sign that indicates a speed limit of 25 miles per hour. The bill would require that these prima facie speed limits apply only to highways that meet certain conditions. The bill would require a city or county that adopts a resolution or ordinance establishing revised prima facie limits to reimburse the Department of Transportation for any costs incurred by that department in implementing the bill. By authorizing a change in the prima facie limits, the bill would expand the scope of an existing crime, thereby imposing a state-mandated local program.

Proposal: Caltrans recommends amending the current CA MUTCD Sections 7B.11 and 7B.12 by including the following text to fulfill the requirements of AB321:

(*Proposed to be placed at the end of Section 7B.11)*

REDUCED SPEEDS, AND TWO-TIER SPEEDS IN SCHOOL ZONES

Support:

For use in this section, engineering and traffic surveys are conducted per CVC 627 and Section 2B.13 of this manual during non-peak traffic periods, and not necessarily when school is in session or when "Children are present" and the posted school zone speed limit could be enforced.

Option:

A local authority may determine upon the basis of an engineering and traffic survey that the prima facie speed limit of 40 km/hr (25 mph) is more than is reasonable or safe in a school zone. The local authority may, by ordinance or resolution, determine and declare a prima facie speed limit of 30 or 20 km/h (20 or 15 mph), whichever is justified as the appropriate speed limit by that survey (see CVC 22358.4)

Standard:

When used, a local ordinance or resolution adopted to establish a 30 or 20 km/h (20 or 15 mph) reduced school zone speed limit shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway. On a State highway, for the ordinance to be effective, it shall be approved by the Department of Transportation and only after appropriate school zone signs are erected upon the State highway.

Option:

A local authority may, by ordinance or resolution, determine and declare prima facie speed limits as follows:

- A 20 km/h (15 mph) prima facie limit in a residence district on a highway with a posted speed limit of 50 km/h (30 mph) or slower, when approaching at a distance of less than 150 m (500 ft) from, or passing, a school building or the grounds of a school building, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 20 km/h (15 mph), while children are present (School Advance Warning Assembly C).
- A 40 km/h (25 mph) prima facie limit in a residence district, on a highway with a posted speed limit of 50 km/h (30 mph) per hour (or slower), when the grounds thereof, contiguous to a highway and posted with a school warning sign indicates a speed limit of 40 km/h (25 mph), while children are present (School Advance Warning Assembly C).

Standard:

If used, two-tier prima facie limits shall apply when approaching, at a distance of:

- **Less than 150 m (500 ft), for a speed limit of 20 km/h (15 mph)**
- **150 to 300 m (500 to 1,000 ft), for a speed limit of 40 km/h (25 mph)**

from, or passing, school grounds that are not separated from the highway by a fence, gate or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates the posted speeds [see Figure 7B-103(CA)].

The two-tier prima facie limits established by the second option above shall apply only to highways that have a maximum of two traffic lanes and a maximum posted 50 km/h (30 mph) prima facie speed limit immediately prior to and after the

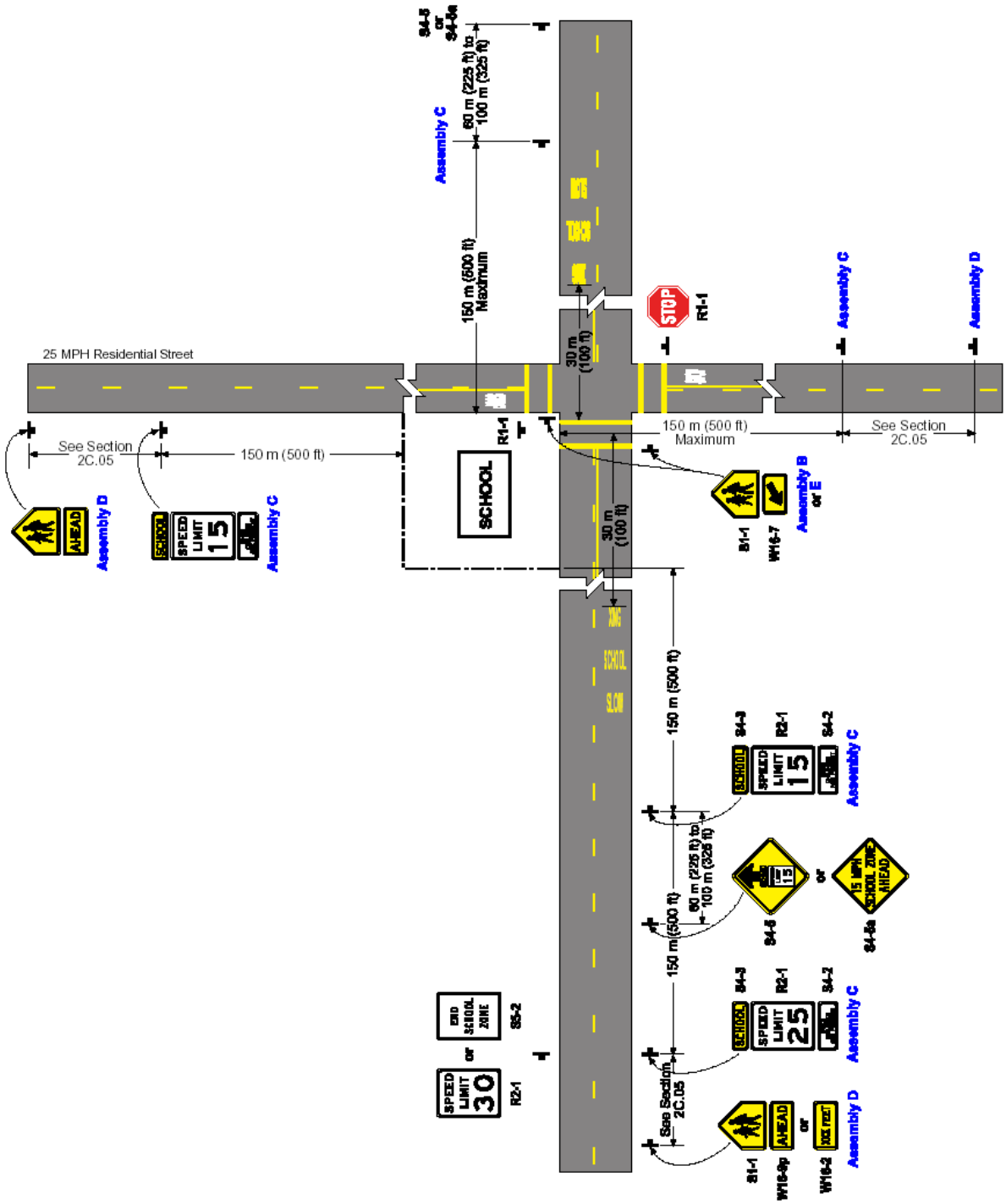
school zone. The prima facie limits shall apply to all lanes of an affected highway, in both directions of travel. When determining the need to lower the prima facie speed limit, the local authority shall take the provisions of CVC 627 into consideration. The local authority shall reimburse the Department of Transportation for all costs incurred by the Department.

(*Proposed to be placed at the end of Section 7B.12)*

Guidance:

For school area traffic control with two-tier school zone speed limits, the Reduced Speed School Zone Ahead (S4-5, S4-5a) sign (See Figure 7B-103(CA)) should be used between speed limit signs to give advance notice of the reduction in speed from the 40 km/h (25 mph) school zone speed to a prima facie speed limit of 20 km/h (15 mph).

Figure 7B-103(CA). Example of Signing for School Area Traffic Control with Two-Tier School Speed Limits



3/26/08 DRAFT

Attachment: Amended CVC Section 22358.4

22358.4. (a) (1) Whenever a local authority determines upon the basis of an engineering and traffic survey that the prima facie speed limit of 25 miles per hour established by paragraph (2) of subdivision (a) of Section 22352 is more than is reasonable or safe, the local authority may, by ordinance or resolution, determine and declare a prima facie speed limit of 20 or 15 miles per hour, whichever is justified as the appropriate speed limit by that survey.

(2) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.

(b) (1) Notwithstanding subdivision (a) or any other provision of law, a local authority may, by ordinance or resolution, determine and declare prima facie speed limits as follows:

(A) A 15 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of less than 500 feet from, or passing, a school building or the grounds of a school building, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 15 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of less than 500 feet from, or passing, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 15 miles per hour.

(B) A 25 miles per hour prima facie limit in a residence district, on a highway with a posted speed limit of 30 miles per hour or slower, when approaching, at a distance of 500 to 1,000 feet from, a school building or the grounds thereof, contiguous to a highway and posted with a school warning sign that indicates a speed limit of 25 miles per hour, while children are going to or leaving the school, either during school hours or during the noon recess period. The prima facie limit shall also apply when approaching, at a distance of 500 to 1,000 feet from, school grounds that are not separated from the highway by a fence, gate, or other physical barrier while the grounds are in use by children and the highway is posted with a school warning sign that indicates a speed limit of 25 miles per hour.

(2) The prima facie limits established under paragraph (1) apply only to highways that meet all of the following conditions:

(A) A maximum of two traffic lanes.

(B) A maximum posted 30 miles per hour prima facie speed limit immediately prior to and after the school zone.

(3) The prima facie limits established under paragraph (1) apply to all lanes of an affected highway, in both directions of travel.

(4) When determining the need to lower the prima facie speed limit, the local authority shall take the provisions of Section 627 into consideration.

(5) (A) An ordinance or resolution adopted under paragraph (1) shall not be effective until appropriate signs giving notice of the speed limit are erected upon the highway and, in the case of a state highway, until the ordinance is approved by the Department of Transportation and the appropriate signs are erected upon the highway.

(B) For purposes of subparagraph (A) of paragraph (1), school warning signs indicating a speed limit of 15 miles per hour may be placed at a distance up to 500 feet away from school grounds.

(C) For purposes of subparagraph (B) of paragraph (1), school warning signs indicating a speed limit of 25 miles per hour may be placed at any distance between 500 and 1,000 feet away from the school grounds.

(D) A local authority shall reimburse the Department of Transportation for all costs incurred by the department under this subdivision.

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

08-17 Proposal to Amend Section 2D.45 to add Ethanol 85 (E85) General Services Sign (P36-40)

Background:

- In Feb 2008, the City of Tulare opened an E85 fueling station.
- Tulare's Public Works Department provided signs and asked the Caltrans D-06 office that these signs be installed by Caltrans to direct motorists seeking the Ethanol 85 (E85) fueling station.
- Caltrans District 6 staff responded ". . . this sign does not appear in the Manual on Uniform Traffic Control Devices." [True]
- City of Tulare wrote to the Director of FHWA (letter attached).
- Proposed is this E85 variation of the general service alternative fuel symbol sign with "E85" placed down the face of fuel pump symbol.
- City of Tulare received a response from FHWA, dated 29 February 2008, (attached) that gave the opinion of FHWA that this sign is in conformance with the provisions of the MUTCD.
- Director Robert Arnold encouraged the City of Tulare to provide public comment on the NPA for the next edition of the MUTCD, by July 31, 2008, to include this variation of the "CNG" (D9-11a) Alternative Fuel sign, identifying Ethanol 85 (E85) as another alternative fuel option.
- Caltrans District 6 did install this sign.
- Currently there is no Caltrans specification for this sign to be fabricated and used in other locations.

Proposal: This adapted General Service Sign meets the "Symbol" requirements, per FHWA, with variation in legend to an established Compressed Natural Gas (CNG) Alternative Fuel sign.

Amended (in red) Section 2D.45 General Services Signs (D9 Series)

Fuel (Gasoline and Diesel) Signs (D9-7, D9-11, G66-11(CA), G66-11A(CA), G66-22A(CA), G66-22B(CA) and G81-52(CA))

Standard:

1. **The maximum distance to a service station shall be 0.8 km (0.5 mi) and have reasonably direct access from and return to the highway.**

Option:

2. Service may be signed to in bypassed communities, if the distance to the service is less than the distance to the next service on the through route.

Standard:

3. **Fuel, oil, compressed air, air gauge, radiator water, drinking water, telephone and restrooms shall be available during all service hours.**

Guidance:

4. The station should be open at least 12 hours a day.

Standard:

5. **Where gasoline is available, the Gas (D9-7) symbol sign shall be used.**
6. **Where gasoline and diesel is available, the Diesel Fuel (D9-11) symbol sign (with a superimposed "D") shall be used.**

Option:

7. The DIESEL (G66-12A(CA)) plaque may be used in addition to other appropriate service signs.
8. Where liquefied petroleum gas is available; a LP GAS (G81-52(CA)) plaque may be used below either D9-7 or D9-11 sign.
9. Where methanol fuel is available, the Methanol Fuel (G66-11(CA)) symbol sign and METHANOL (G66-11A(CA)) plaque may be used in addition to other appropriate service signs.

10. The Compressed Natural Gas (G66-22A(CA)) sign may be used for Compressed Natural Gas Refueling Stations within 4.8 km (3 mi) of a State highway and be available to the public at least 16 hours a day.
11. The Liquefied Natural Gas (G66-22B(CA)) sign may be used for Liquefied Natural Gas Refueling Stations within 4.8 km (3 mi) of a State highway and be available to the public at least 16 hours a day.
12. The Ethanol 85 Alternative Fuel (G66-23(CA)) sign may be used for Ethanol 85 Refueling Stations within 4.8 km (3 mi) of a State highway and be available to the public at least 16 hours a day.

Standard:

~~12~~ 13. Follow-up signing, if necessary, shall be placed by local agencies before signs are placed on the State highway.

G66-23 (CA)
(proposed)

Attachments: Correspondences between City of Tulare and the FHWA

U.S. Department of Transportation
Federal Highway Administration

1200 New Jersey Avenue, SE.
Washington, DC 20590

February 29, 2008

In Reply Refer To: HOTO-1

Lewis R. Nelson, P.E.
Public Works Director
City of Tulare
3981 South K Street
Tulare, CA 93274

Dear Mr. Nelson:

Thank you for your February 15 letter requesting a change to the *Manual on Uniform Traffic Control Devices* (MUTCD) in the area of General Service signs. Specifically, you requested that a symbol sign for ethanol fuel be added to Figure 2D-11, "General Service Signs," of the MUTCD.

Section 2D.45 of the MUTCD contains the provisions for General Service signs on Conventional roadways. This Section allows the option of using either words or symbols to display the available services. Figure 2D-11 shows designs for typical General Service symbols, and includes a symbol sign for Alternative Fuel (D9-11a). The example illustrated in this Figure incorporates the abbreviation "CNG" for compressed natural gas.

In addition, Section 2E.51 contains the provisions for General Service signs when used in Freeway and Expressway applications. This Section allows the option of either substituting the Alternative Fuel General Service symbol for the Gas General Service symbol (D9-7), or appending such a word message sign to the Gas General Service sign.

Because the MUTCD already contains provisions by which alternative fuels can be displayed on General Service signs, the example of the sign that you provided, which substitutes the abbreviation "E85" for "CNG" on the Alternative Fuel symbol sign illustrated in Figure 2D-11, is in conformance with the provisions of the MUTCD.

As you might be aware, a Notice of Proposed Amendments (NPA) to the MUTCD was issued January 2 and is open for public comment until July 31. Comments on this NPA must be on official record in the public docket in order to be considered as part of the rulemaking process. We encourage you to submit comments to the docket if there are specific changes that you recommend for consideration in the next edition of the MUTCD. Comments may be submitted at **www.regulations.gov** by referencing Docket No. FHWA-2007-28977.

AMERICAN ECONOMY

We appreciate the opportunity to provide this information to you and hope you find it helpful. If we can be of further assistance on this matter, please contact Mr. Kevin Sylvester at 202-366-2161.

Sincerely yours,

Robert Arnold
Director, Office of Transportation Operations

cc: Mr. Robert Copp

City of Tulare
Agri-Center Of The World

Public Works

February 15, 2008

Federal Highway Administration
Director of the Office of Transportation Operations (HOTO)

Regarding: Manual on Uniform Traffic Control Devices
Figure 2D-11 General Service Signs
Addition of E85 Ethanol Fuel Sign

The President and Governors of many states, including California, are promoting the growth of use and availability of E85 ethanol vehicle fuel. The city of Tulare recently received Department of Energy and California Air Resources Board funding to build an E85 station. The General Service Signs (photo of off freeway sign attached) we made by the City of Tulare and provided to California Department of Transportation local district 6 personnel for installation some months ago. When the E85 station opened this week, we called Caltrans and asked them to install our signs. Their response was that this sign does not appear in the Manual on Uniform Traffic Control Devices (MUTCD). I have attached a link to the referenced page in the MUTCD.

There are over 1,700 E85 stations operating in America. The Tulare station is the third in California and the first in the San Joaquin Valley. Caltrans has a process for reviewing and approving signs that are not in MUTCD, but the process is time-consuming. California has recently granted $25 million for the establishment of new E85 stations, and many will be located along State or Federal highways.

It is important to sign the exits where these stations are located so that drivers of flexfuel vehicles are able to locate this "home grown" fuel. The city of Tulare requests that the MUTCD be modified by addition of a General Services Sign for E85.

Please call me at (559) 684-4318, or e-mail at lnelson@ci.tulare.ca.us if you have any questions.

Sincerely,

Lewis R. Nelson

Lewis R. Nelson, P.E.
Public Works Director

3981 South "K" Street • Tulare, California 93274 • 559.684.4318 • Fax 559.685.2378
AN EQUAL OPPORTUNITY EMPLOYER

08-18 Proposal to Adopt "NO IDLING COMMERCIAL VHICLES & SCHOOL BUSES" sign (P41-47)

Air Resources Board

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

California Traffic Control Devices Committee April 23, 2008

SUBJECT: REQUEST FOR "NO IDLING" SIGNS PLACED AT STATE PROPERTIES

Dear Committee Members:

The Air Resources Board (ARB) is responsible for the protection of air quality in California. Since 1972, the ARB has adopted regulations that significantly reduce pollution from mobile and stationary sources from diverse generators such as dry cleaners, refineries, locomotives, off-road vehicles and equipment, stationary electric generators, passenger cars and diesel powered trucks and buses. Our air quality is cleaner than in the 1950's as evidenced by huge reduction of smog alerts that used to plague the eyes and respiratory systems of California residents. To this day, our progress to improve the quality of the air we breathe continues despite the massive increases of residential population and commercial and privately owned vehicles.

To help further protect California residents from respiratory system ailments especially in children and the elderly, the Board has adopted regulations to prohibit idling of commercial vehicles and school buses. These solutions are immediate and profound.

The Board, however, needs your assistance to develop sign(s) that prohibit idling and strategically place them on state owned properties. These include rest stops operated by Caltrans, State parks such as the Hearst Castle, the State Capitol, the California Highway Patrol Commercial Vehicle Inspection Facilities and Platform Scales, the campuses of the University of California, and any other properties owned by the State.

Attached is a proposal for "No Idling" sign for your review and approval. If you have any questions, please contact me at 626.450.6155 or at dgaslan@arb.ca.gov.

Sincerely,

Darryl P. Gaslan

Darryl P. Gaslan, Manager
Heavy Duty Diesel Enforcement Section - South

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov

California Environmental Protection Agency

Printed on Recycled Paper

PROPOSAL FOR THE DEVELOPMENT OF SIGNS TO PROHIBIT THE IDLING OF HEAVY DUTY VEHICLES

BACKGROUND

The California Air Resources Board (ARB) is responsible for the protection of air quality in California. It is the only State in the Nation that the United States Environmental Protection Agency has given authority to implement its own mobile air quality programs.

Since 1968, the ARB has adopted stringent vehicular exhaust standards to reduce harmful exhaust gases and particulates from diesel and gasoline powered vehicles. New cars today are over 95 percent cleaner than their 1970 predecessors. New vehicle diesel engines are now required to reduce particulates and oxides of nitrogen – the brown haze over California basins. In-use vehicle diesel engines are being equipped with oxidation catalysts and diesel particulate filters (retrofit devices) to reduce particulates. Future ARB standards will render the diesel engine to be smokeless and odorless and complimentary to the concerns of global warming due to its low carbon dioxide emissions.

Poor air quality is composed of exhaust gases and small particles emitted from almost 30 million gasoline and diesel powered cars, trucks, and buses that chemically react with other gases and form additional harmful gases. The California air basins (flatlands surrounded by mountains) retain these gases in populated areas and dramatically compound the issues of pollution effects on human health.

Diesel gases and particulates cause great harm to the respiratory and cardiovascular systems. Small children and the elderly are especially susceptible to poor air quality. Since 1989, the ARB conducted in-depth scientific and epidemiological studies on human and animal health effects. These studies are presented in the Executive Summary of the "Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant" and were discussed by the Scientific Review Panel. The panel is composed of independent scientists that review studies for scientific accuracy. In 1998, the ARB declared that the small particles contained in diesel exhaust are toxic air contaminants and are carcinogenic and mutagenic.

The declaration has allowed the ARB to begin risk management. This is intended to reduce diesel exhaust exposure through Toxic Air Contaminant Control Measures.

PROPOSAL

The ARB proposes that the California Traffic Control Devices Committee assist in the design and approval of sign(s) to prohibit idling of school buses and commercial vehicles.

The sign(s) would be drafted according to the following criteria:

- appropriate language to limit idling;
- specify the regulatory language;

- sized to be consistent with existing roadside signs (e.g. "No Parking" signs).

Placement Locations

- California Highway Patrol Inspection Facilities and Platform Scales;
- Caltrans owned and operated highway rest stops;
- State parks and the State capitol building;
- Campuses of the University of California;
- State-owned buildings and facilities with loading docks.

JUSTIFICATION

Diesel exhaust particulates of concern range in size from 10 microns to 2.5 microns and less. That is smaller than roughly 1/5 the diameter of human hair. In contrast, dust particles from working in a garden are large enough to be easily expelled through the wave-like motion of cilia, tiny hairs in the lungs that move in a wave-like motion. The extremely small diesel particulates are easily lodged in between the cilia and cause carcinogenic and mutagenic effects in human respiratory systems. Children are more vulnerable than adults to air pollutants because they have higher inhalation rates, narrower airways, and less mature immune systems. The elderly are also extremely susceptible to these effects. In addition, respiratory ailments such as asthma can be greatly aggravated.

Clearly, one of the immediate solutions to reduce human exposure to diesel toxic air contaminants is to turn off the diesel engines that power school buses and commercial vehicles as soon as possible. In 2003, the California Code of Regulations Section 2480 (Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools) became effective. In 2005, Section 2485 (Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling) prohibited the idling of commercial vehicles.

Operators of vehicles, where ever they are domiciled, now need to be informed of these regulations. The staff of the Air Resources Board recommends that the California Traffic Control Devices Committee develop and promote the distribution of "No Idling" signs at appropriate locations within State owned properties.

The proposed sign is shown on the following page:

Proposal: Caltrans recommends for the adoption of the following sign and policy statement.

DRAFT

24”x24” Sign with 4.5” and 2.5” Lettering

1.500" Radius, 0.625" Border, 0.375" Indent, Black on White;
“NO IDLING” B 50% spacing; “COMMERCIAL” B; “VEHICLES &” B; “SCHOOL BUSES” B 70% spacing;

The following policy statement will be incorporated in to the Section 2B.39 Parking, Standing and Stopping Signs (R7 and R8 Series)**:**

Option:

The NO IDLING COMMERCIAL VEHICLES & SCHOOL BUSES sign may be used on State owned properties to prohibit idling of commercial vehicles and school buses that are equipped with a diesel engine for duration greater than 5 minutes (refer to CCR Title 13, 2480 and 2485)

Standard:

If used, the NO IDLING COMMERCIAL VEHICLES & SCHOOL BUSES sign shall be placed within 100 feet of the restricted area.

Support:

The State owned properties where this sign can be placed include rest stops operated by Caltrans, State Parks such as Hearst Castle, the State Capital, the California Highway Patrol Commercial Vehicle Inspection Facilities and Platform Scales, the Campuses of Universities and Colleges owned by the State of California, and any other property owned by the State.

Attachment: The CCR Title 13, 2485:

§ 2485. Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial

Motor Vehicle Idling.

(a) *Purpose.* The purpose of this airborne toxic control measure is to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles.

(b) *Applicability.* This section applies to diesel-fueled commercial motor vehicles that operate in the State of California with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. This specifically includes:

(1) California-based vehicles; and

(2) Non-California-based vehicles.

(c) *Requirements.*

(1) *Idling Restriction.*

On or after February 1, 2005, the driver of any vehicle subject to this section shall comply with the following requirements, except as noted in subsection (d) below:

(A) the driver shall not idle the vehicle's primary diesel engine for greater than 5.0 minutes at any location.

(B) the driver shall not operate a diesel-fueled auxiliary power system (APS) to power a heater, air conditioner, or any ancillary equipment on that vehicle during sleeping or resting in a sleeper berth for greater than 5.0 minutes at any location when within 100 feet of a restricted area.

Note: For more detail, visit to the following website:

http://www.arb.ca.gov/toxics/sbidling/sbidling.htm

http://www.arb.ca.gov/regact/idling/idling.htm

List and Implementation Schedule for
District Measures to Reduce PM
Pursuant to Health & Safety Code §39614(d)

Executive Summary

In 2003, the Legislature enacted Health and Safety Code (H&S Code) §39614 (SB 656, Sher), to reduce public exposure to PM10 and PM2.5. H&S Code §39614 requires the California Air Resources Board (CARB) in consultation with local air pollution control and air quality management districts (air districts), to develop and adopt, by January 1, 2005, a list of the most readily available, feasible, and cost-effective control measures that could be employed by CARB and the air districts to reduce PM10 and PM2.5

(collectively PM). The list of proposed control measures were to be based on rules, regulations, and programs existing in California as of

January 1, 2004. H&S Code §39614 also requires that by July 31, 2005, air districts to adopt implementation schedules for appropriate measures. Finally, by no later than January 1, 2009, CARB must prepare a report describing actions taken to fulfill the requirements of the legislation as well as recommendations for further actions to assist in achieving the State PM standards. H&S Code §39614 sunsets on January 1, 2011, unless extended. On November 18, 2004, CARB adopted *Proposed List of Measures to Reduce Particulate Matter – PM10 and PM2.5* to satisfy the initial requirements of H&S Code §39614. The CARB adopted document contains a table entitled "SB656 List of Air District Measures that Reduce Particulate Matter" (Local PM Measures List). H&S Code §39614(d) requires the Antelope Valley Air Quality Management District (AVAQMD) to adopt an implementation schedule for the most cost-effective local measures from this list.

This document has been prepared to meet the requirements of H&S Code §39614(d) by analyzing each control measure on the Local PM Measures List and placing each into one of four (4) categories. The first category includes measures that are already being implemented by the AVAQMD in its Rules and programs. The second category lists measures that do not need to be implemented within the AVAQMD because there are no sources of that type currently located within the district and any new sources would be required to install Best Available Control Technology (BACT) pursuant to the AVAQMD's New Source Review (NSR) regulations. A third category includes those measures that are included or could be included in rules scheduled for adoption or modification in the near future. The final category lists those measures which require additional cost effectiveness analysis to determine if such rules are feasible to implement within the AVAQMD.

Violations: Infractions

34506.3. Except as otherwise provided in this division, it is an infraction to fail to comply with any rule or regulation adopted by the department pursuant to this division.

5 Experimentation items:

(P48-53)

08-19 Proposal to Experiment with Internally Illuminated Directional Turn Signs (IDTS)

Proposal for Experimental Use of a Non-Standard Traffic Control Device

Illuminated Turn Directional Signs

City of Pismo Beach, California

November 2007

The City of Pismo Beach has identified a problem with controlling intersection left turning movements at a major intersection that experiences major congestion during peak traffic conditions. A creative and non-standard solution is proposed.

SCOPE

The City of Pismo Beach is requesting permission to install Illuminated Directional Turn Signs (IDTS) to control and direct the desired turning movements at the signalized intersection of Highway 1 (Pacific Coast Highway / Dolliver Street) at Pomeroy Avenue.

Left turns from the State Highway have been controlled by installing six-mast arm and pole mounted signs during the summer tourist season. Maintenance is costly and annual Caltrans encroachment permits are processed through the local Caltrans District 5 office. Specifically, the intersection of Pacific Coast Highway and Pomeroy Avenue has proven to be the City's most problematic location. Even with six signs, motorists frequently make illegal turning movements. Based on data provided by the City's police department the number of turning movement violations documented more than doubles during the summer months. The monthly variation in violations is summarized below in Table 1.

Table 1
Monthly Turning Movement Violations
Dolliver Street at Pomeroy Avenue

Month	Year	Number of Violations	Year	Number of Violations
May	2006	7	2007	5
June	2006	28	2007	20
July	2006	13	2007	20
August	2006	8	2007	2 (partial month)
September	2006	7	2007	NA

During off peak traffic periods it is desirable to allow left turns in the interest of increased mobility and reduced driver inconvenience. As seen in Table 1, the City would like to have flexibility in the management of the turn restrictions at this location.

The IDTS is being requested for installation. One mounted on the traffic signal mast arm and a second indication being mounted on a Type 1-A traffic signal pole. The proposed arrangement of the indications is graphically depicted on Exhibits 1 and 2. The proposed units are 18" or 24" square and weight approximately 50 pounds each. Once a specific manufacturer is chosen, a more specific size weight detail can be provided.

WORK PLAN

Installation

The City wishes to install internally illuminated directional turn signs (IDTS) to control and direct turning movements at the intersections of Highway 1 (Pacific Coast Highway / Dolliver Street) at Pomeroy Avenue. These square signs would be mounted adjacent to the traffic signal heads located at the tip of the mast arm and on top of the Type 1-A traffic signal poles.

The City would be able to remotely change the message displayed either from a central station or traffic signal controller cabinet. In this manner, the City could address the daily and seasonal variations in turning movements safely, quickly and efficiently. This communication would be accomplished via hard wire connection or wireless connection.

There is more than one manufacturer of these units that can be utilized to perform the desired functions. The units attach to the traffic signal mast next to the vehicle head near the tip of the mast arm using a strap and saddle type of connection. The connection is similar to the street name sign attaching brackets, but designed for the weight of the unit. Based on research, these units have an equivalent weight to a vehicle head. As such, the unit would be accounted for in the case loading for the signal pole/mast arm designation. Currently, the existing pole/mast arms installed for the traffic facing Dolliver are Type 17-3-70 units. With the mast arm vehicle head and arm mounted street name signs, there is one more loading space available on the existing units. With the removal of the existing R3-18 signs and the installation of the LED models, the existing pole/mast arms can be used. Minor rewiring of the controller cabinet would be required to power and utilize the units.

Based on the existing Type 1A poles at locations D and F (See attached as-built traffic signal plan), the vehicle head mounting could be changed from a TV-1 mounting to a TV-2 mounting and special brackets could be fabricated to attach the LED unit to the vehicle head mounting bracket. As the weight and wind loading for the LED unit is similar to the vehicle head, adding the second unit to the Type 1A pole would be within acceptable design limits for the existing pole.

Evaluation

The effectiveness and acceptance will be measured in accordance with the time period and evaluation procedures shown below.

Time Period

The schedule for testing is as follows:

- Pre-Installation Evaluation — January – March 2008
- Installation — March 2008
- Experiment Period — March 2008 – September 2008
- Evaluation of Results — October 2008

EVALUATION PROCEDURES

To evaluate the effectiveness of the LED ITDS signs, a reduction in traffic violations would be a clear indication that the new system achieved the goal. Another measure of effectiveness is to evaluate the visual appearance of the new system contrasted with the six signs that are needed to control traffic. A third measure of effectiveness, would be to compare the amount of staff time in the current process of preparing and encroachment permit through Caltrans, installation of the signs, and removal of the signs to the costs of maintaining the LED ITDS units and changing the messages displayed.

ADMINISTRATION

Sponsoring Agency: City of Pismo Beach, Public Works Department

Contact Information:
R. Dennis Delzeit, PE
Director of Public Works / City Engineer
City of Pismo Beach
760 Mattie Rd
Pismo Beach, CA 93449
(805) 773-7037

Manufacturer: Unknown at this time

Installation: City forces or traffic signal installation contractor to be determined

Prepared by Orosz Engineering Group, Inc.:

Stephen A. Orosz, P.E.

REGISTERED PROFESSIONAL ENGINEER
STEPHEN A. OROSZ
No. RCE 36995
Exp. 6/30/08
CIVIL
STATE OF CALIFORNIA

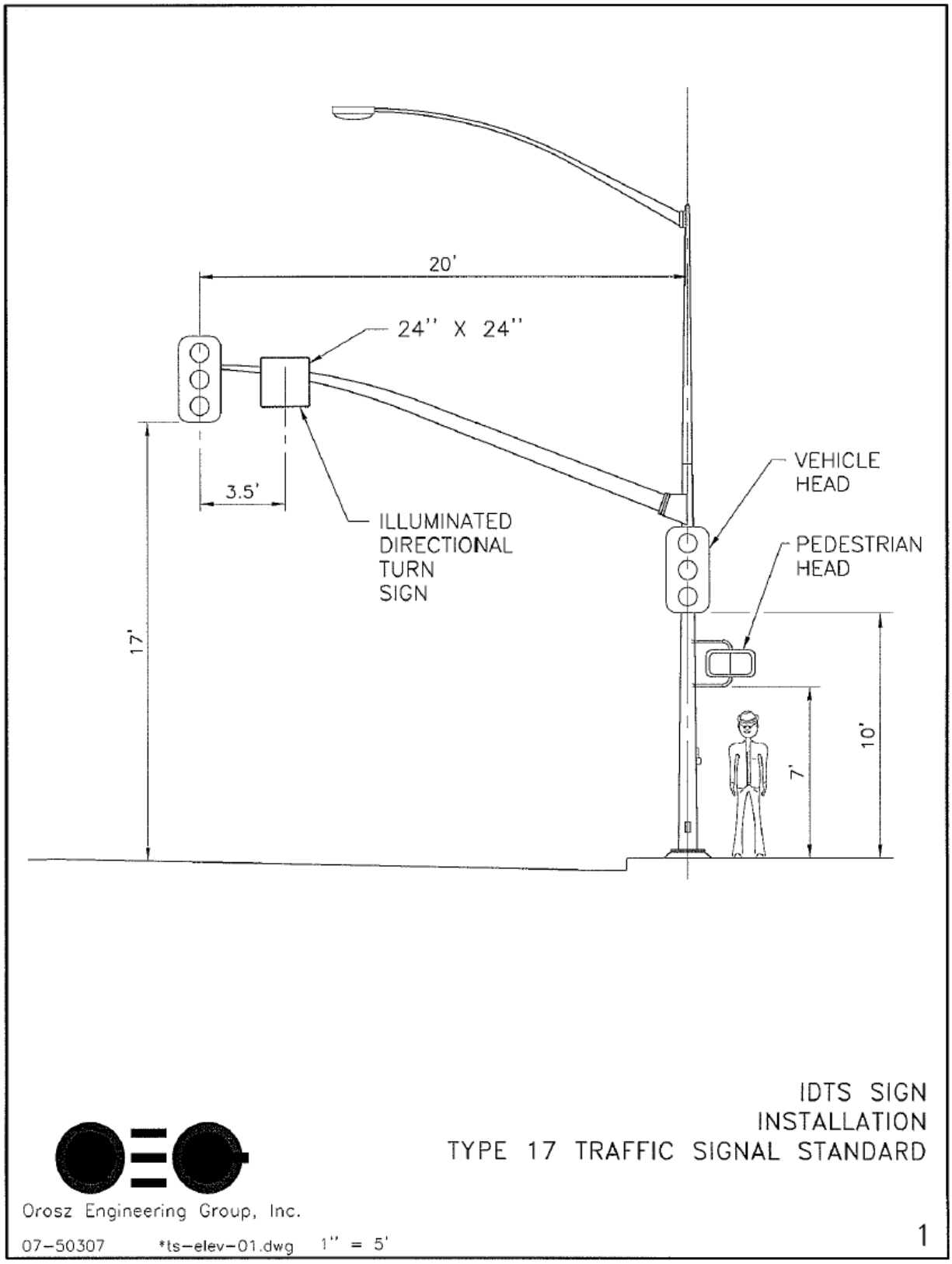
Reviewed and Approved by:

R. Dennis Delzeit, P.E.

12/7/07

Public Works Director/City Engineer

REGISTERED PROFESSIONAL ENGINEER
R. DENNIS DELZEIT
No. 22340
Exp: 09-30-09
CIVIL
STATE OF CALIFORNIA

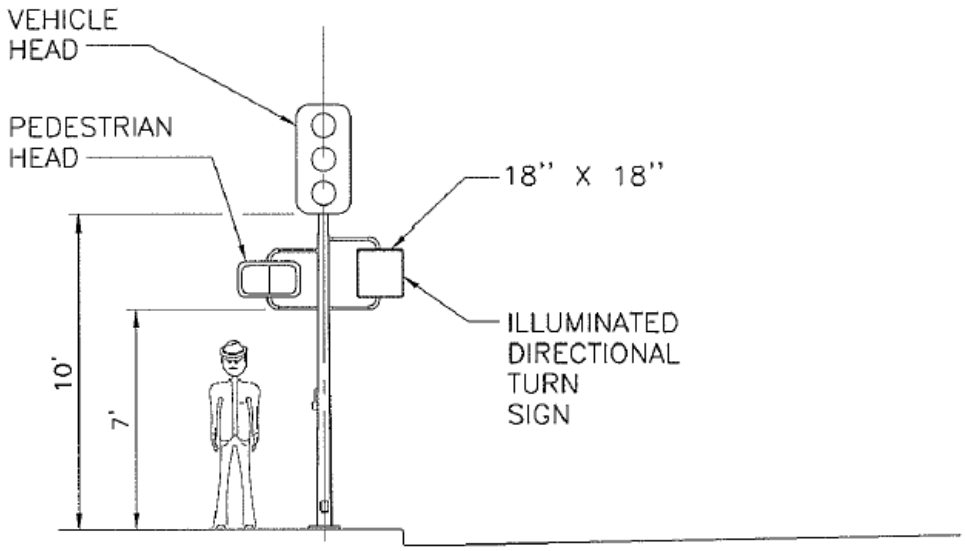


IDTS SIGN
INSTALLATION
TYPE 17 TRAFFIC SIGNAL STANDARD

Orosz Engineering Group, Inc.

07-50307 *ts-elev-01.dwg 1" = 5'

1



IDTS SIGN
INSTALLATION
TYPE 1-A TRAFFIC SIGNAL STANDARD

Orosz Engineering Group, Inc.

07-50307 *ts-elev-01.dwg 1'' = 5'

2

08-20 Request to Experimentation with Flashing Yellow Arrow for Permissive Right Turn Movement (P54-57)

To: California Traffic Control Devices Committee
From: The County of Marin
Subject: Experimentation Request
Test Subject: Flashing yellow arrow for permissive right turn movement
Location: Intersection of Sir Francis Drake Blvd and Wolfe Grade, Kentfield, CA

Description of Project Location

The project location is the signalized intersection of Sir Francis Drake Boulevard and Wolfe Grade in the town of Kentfield in the County of Marin, California. In the vicinity of the project Sir Francis Drake Boulevard is an arterial road that leads to Highway 101 to the east and to the towns of Ross and San Anselmo to the west. To the north Wolfe Grade is a collector road that serves a residential neighborhood and is also a popular route into Central San Rafael. The south side of the intersection is an access to Bacicc Elementary School.

Description of the Problem

During certain times of the day the right turn volume from westbound Sir Francis Drake Boulevard to Wolfe Grade is high. There is a right turn island on the Wolfe Grade leg of the intersection creating a free right turn condition for westbound traffic. The pedestrian crossing from the corner to the right turn island is also not controlled by the signal. It has been observed that drivers making the free right turn do not slow down very much and rarely yield to pedestrians crossing to and from the right turn island. Although there is a relatively wide departure lane on Wolfe Grade for a short distance, there is no true acceleration lane for the right turn from Sir Francis Drake Boulevard. Therefore, there are frequent conflicts between vehicles making the free right and vehicles making the left turn from eastbound Sir Francis Drake Boulevard. Pedestrians also appear to be avoiding the north crosswalk.

Description of Proposed Change

The proposed change is to use the signal to control both the pedestrian crossing to the right turn island and the westbound right turns. To accomplish this, additional pedestrian indications will be installed on both of the north corners and both of the right turn islands. The full crossing between the north corners will then be controlled as one pedestrian phase that will be concurrent with westbound traffic. New three section vehicle heads will also be installed to control the westbound right turn movement. The new three section heads will consist of a steady right red arrow, a steady right yellow arrow and a flashing right yellow arrow. The new three section head will be programmed to display a flashing yellow arrow, to create a permissive right turn phase, when westbound through traffic has the green unless there is a pedestrian call for the north crosswalk, in which case the right turn indications will continue to display the solid red arrow. This will be accomplished by using an overlap phase with pedestrian phase omit. An R10-17a sign will also be installed to allow westbound right turns on red during the steady red arrow.

There is also a free right turn from southbound Wolfe Grade to westbound Sir Francis Drake Boulevard that will receive a similar design treatment for essentially the same reasons.

Benefits of the Proposed Change

One typical method for addressing the types of conflicts that are occurring at this intersection is to remove the right turn island that creates the free right and uncontrolled pedestrian movement. However, this is a relatively expensive solution and does not completely eliminate conflicts between right turning vehicles and pedestrians because, although the two movements become under control of the signal, the right turn still receives a green indication at the same time that the pedestrian movement is given a walk indication. The County is seeking more positive separation of these conflicting movements.

In the past the County tried controlling the westbound right turn with a stop sign. The stop control proved overly restrictive and the right turn queue occasionally extended to Hwy 101, a distance of approximately 1.25 miles, during peak traffic.

The proposed change will provide positive separation between the conflicting movements because the right turn will receive a steady red arrow whenever the pedestrian move is served. However, the control will not be as restrictive as a stop sign because right turning vehicles will be able to proceed relatively unimpeded during the permissive right turn phase. The proposed change is also much simpler and less expensive to implement than removing the right turn island.

Evaluation Plan

The primary measure of effectiveness for the change will be crash data. The County of Marin will compile crash data for the test location for a period of two years prior to installation of the experimental design. The County will then compile intersection crash data every six months for two years after installation to evaluate the effectiveness of the change. The crash data will be analyzed to determine if the number of crashes involving westbound right turn vehicles declines as a result of the experimental design.

While the experimental design is less restrictive than a stop sign, it is more restrictive that the existing free right condition. Therefore there is potential for the westbound right turn queue to increase after implementation. The County will monitor the right turn queue length after implementation and if it becomes unacceptably long the experiment will be ended and the intersection will be returned to its currently existing configuration. The County will then consider other design alternatives.

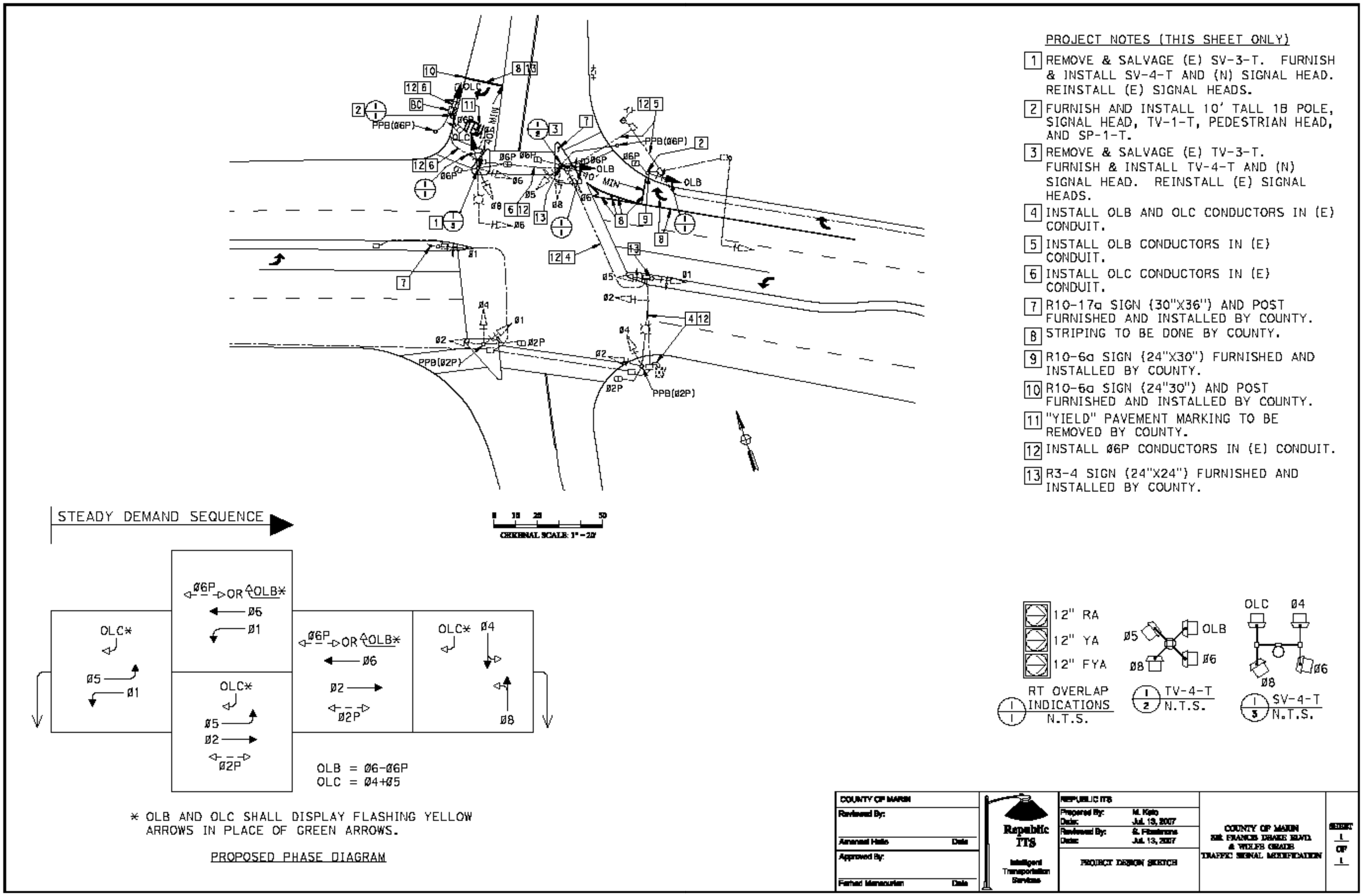
Administration

The County of Marin Department of Public Works will be sponsoring agency and the agency conducting the study. The principal researchers will be Farhad Mansourian, Director, and Amanuel Haile, Assistant Traffic Engineer, of the County of Marin Department of Public Works.

Attachments

Attached for reference are the following:

1. Aerial photo
2. Traffic signal modification plan for implementation of the experimental design


PROJECT NOTES (THIS SHEET ONLY)
1 REMOVE & SALVAGE (E) SV-3-T. FURNISH & INSTALL SV-4-T AND (N) SIGNAL HEAD. REINSTALL (E) SIGNAL HEADS.
2 FURNISH AND INSTALL 10' TALL 1B POLE, SIGNAL HEAD, TV-1-T, PEDESTRIAN HEAD, AND SP-1-T.
3 REMOVE & SALVAGE (E) TV-3-T. FURNISH & INSTALL TV-4-T AND (N) SIGNAL HEAD. REINSTALL (E) SIGNAL HEADS.
4 INSTALL OLB AND OLC CONDUCTORS IN (E) CONDUIT.
5 INSTALL OLB CONDUCTORS IN (E) CONDUIT.
6 INSTALL OLC CONDUCTORS IN (E) CONDUIT.
7 R10-17a SIGN (30"X36") AND POST FURNISHED AND INSTALLED BY COUNTY.
8 STRIPING TO BE DONE BY COUNTY.
9 R10-6a SIGN (24"X30") FURNISHED AND INSTALLED BY COUNTY.
10 R10-6a SIGN (24"30") AND POST FURNISHED AND INSTALLED BY COUNTY.
11 "YIELD" PAVEMENT MARKING TO BE REMOVED BY COUNTY.
12 INSTALL Ø6P CONDUCTORS IN (E) CONDUIT.
13 R3-4 SIGN (24"X24") FURNISHED AND INSTALLED BY COUNTY.
STEADY DEMAND SEQUENCE
OLB = Ø6-Ø6P
OLC = Ø4+Ø5
* OLB AND OLC SHALL DISPLAY FLASHING YELLOW ARROWS IN PLACE OF GREEN ARROWS.
PROPOSED PHASE DIAGRAM
12" RA
12" YA
12" FYA
RT OVERLAP INDICATIONS N.T.S.
TV-4-T N.T.S.
SV-4-T N.T.S.
COUNTY OF MARIN
Reviewed By:
Amanuel Haile Date
Approved By:
Farhad Mansourian Date
Republic ITS
Intelligent Transportation Services
REPUBLIC ITS
Prepared By: M. Kato
Date: Jul. 13, 2007
Reviewed By: S. Fitzsimons
Date: Jul. 13, 2007
PROJECT DESIGN SKETCH
COUNTY OF MARIN
SIR FRANCIS DRAKE BLVD. & WOLFE GRADE
TRAFFIC SIGNAL MODIFICATION
SHEET 1 OF 1

Aerial Photo of Sir Francis Drake Boulevard and Wolfe Grade

08-21 Proposal to Experiment with Regulatory Sign "Bike may Use Full Lane" (Green on White)

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
50 HIGUERA STREET
SAN LUIS OBISPO, CA 93401-5415
PHONE (805) 549-3101
FAX (805) 549-3329
TTY 711
http://www.dot.ca.gov/dist05/

Flex your power!
Be energy efficient!

PROPOSAL FOR EXPERIMENTAL USE OF A NON-STANDARD TRAFFIC CONTROL DEVICE – REGULATORY SIGN FOR BICYCLES TO UTILIZE THE FULL TRAVEL LANE

SCOPE

The California Department of Transportation (Caltrans) proposes an experiment using a new regulatory sign directed at bicyclists and motorists, containing a bicycle symbol followed by the wording: "MAY USE FULL LANE" (see Figure 1). The sign (CA SR4-11) will be used to remind bicyclists and motorists of the California Vehicle Code (CVC) 21202 allowing bicycles full use of the travel lane when necessary.

WORK PLAN

Installation
The experimental regulatory signs will be installed along Route 1 (Mission Street) in Santa Cruz in the northbound and southbound directions at locations where roadway width may deem use of the full lane necessary by the bicyclist ..

Evaluation
Effectiveness and acceptance will be measured in accordance with the time period and evaluation procedures shown below.

Time Period
The schedule for testing is as follows:

• Pre-Installation Evaluation	April to May 2008
• Installation	June 2008
• Experimental Period	June 2008 to June 2009
• Evaluation of Results	October 2009

EVALUATION PROCEDURES

The Department requests that the Committee approve the preliminary evaluation plan outlined below. Other criteria and procedures may evolve during the evaluation period. Any additional methods of evaluation or changes in procedures will be discussed in the scheduled reports submitted to the project sponsor and the Committee.

1. Installation Documentation – to be prepared by the Department

2. Before and after collision data will be prepared by the Caltrans Traffic Safety Division.

Measures of effectiveness and acceptance before and after the testing period may include, but are not limited to: Comparison of the total number of incidences before the installation with the number of incidences after the installation.

ADMINISTRATION

Sponsoring Agency: CA Department of Transportation
Traffic Safety, District 5

Contact Information: Dario A. Senor, P.E.
Transportation Engineer
50 Higuera Street
San Luis Obispo, CA 93401
Tel: (805) 503-9374
Fax:(805) 542-4705

Manufacturers: Standard sign vendors

Installations: Caltrans Maintenance Crew

Proposed SR4-11(CA)

7. **Discussion Items:**

08-12 REPORT DRUNK DRIVERS – CALL 911 Signs (P61-62)

Background:

Johnny Bhullar informed the Committee that this was not an official traffic control device, however, there was a campaign by the California Office of Traffic Safety (OTS), California Highway Patrol (CHP), California Department of Transportation (Caltrans), Department of Motor Vehicles (DMV) and Department of Alcoholic Beverage Control (ABC) to crackdown on DUI drivers during the holidays. The plan includes the installation of 'Report Drunk Drivers Call 911' roadway signs throughout California in conjunction with the media campaign. In response to this campaign, Caltrans will be installing 759 signs, resulting in one sign every 40 miles in each direction on the entire State highways by June 2008.

John Fisher asked whether the MUTCD or CA MUTCD covers any slogan signs which can be used in this kind of campaign.

Acting Chairman Bahadori stated that the Committee might want to consider items to be placed on the future agenda as a discussion item to address future signs like this.

Johnny Bhullar stated that numerous times OTS, Caltrans and CHP want to promote safety. They develop signs and install on public roadways without following the process.

Acting Chairman Bahadori commented that there should be an evaluation of this type of campaigning to see if they are effective or not. He further asked if the Committee would consider placing a general item on the agenda for discussion of how to handle campaign type signs in the future.

Johnny Bhullar suggested that might be a general item to discuss about local agencies considering safety campaigns, and what they should do when they use these types of signs for campaigning.

Committee unanimously agreed to place a general item on the agenda under discussion for the upcoming meeting.

Proposal:

Some local agencies have started installing these signs on their facilities and Caltrans has received requests from agencies seeking specifications for ordering these signs. In the interest of uniformity and to meet this need, Caltrans proposes to make this sign official, for use on all public roadways as part of an agency's safety campaign.

Section 2D.48 General Information Signs (I Series)

REPORT DRUNK DRIVERS CALL 911 (G81-6X(CA)) Sign

Option:

The REPORT DRUNK DRIVERS CALL 911 (G81-6X(CA)) Sign may be installed on the roadway as a part of the agency's safety campaign.

Safety Campaign Signs – General Discussion

At the January 31, 2008 meeting, it was discussed to place a general item on the agenda to discuss how agencies should handle safety campaign signs. Upon further research of the CA MUTCD, it was found that FHWA acknowledges and allows safety related messages for use on general information signs per Section 2D.48. Further, FHWA also allows agencies to develop their own word message signs per Section 2A.06 but CA MUTCD limits this flexibility.

Direction is needed from the CTCDC on how an agency should proceed when confronted with an urgent safety media campaign and the need to create and install safety message signs on the roadways. Due to the urgent nature of these situations, sometimes, there isn't sufficient time available to wait for the next CTCDC meeting or sometimes the following meeting in case the agenda deadline has been missed.

Portions of the CA MUTCD pertaining sections follow:

Section 2D.48 General Information Signs (I Series)

Standard:

When a sign is used to display a safety or transportation-related message, the display format shall not be of a type that would be considered similar to advertising displays. Messages and symbols that resemble any official traffic control device shall not be used on safety or transportation-related message signs.

Section 2A.06 Design of Signs

State ~~and local highway agencies~~ Department of Transportation may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information.

Standard:

Except as noted in the Option below, highway agencies shall not develop word message signs. In accordance with CVC Section 21401, only word message signs conforming to Department of Transportation standards and specifications shall be placed on streets and highways.

Option:

Local agencies may develop place/facility name or day, date, time portion of the word message on signs to notify road users of special events/circumstances or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, these place/facility name or day, date, time modified word message signs may be used without the need for experimentation.

Support:

Sign design details are contained in FHWA's Standard Highway Signs book and Department of Transportation's California Sign Specifications. Signs other than those shown in these publications, the MUTCD or this California MUTCD may be required under special conditions. See Section 1A.11 for information regarding these publications.

08-13 MUTCD 2003 Revision No. 2 - Maintaining Traffic Sign Retroreflectivity (P63-69)

Background:

FHWA has issued Revision No. 2 to their MUTCD 2003 Edition, as published in the Federal Register on December 21, 2007. It primarily deals with the maintenance of traffic sign retroreflectivity. Please be aware that this MUTCD Revision No. 2 is not effective immediately in California but we have a maximum of 2 years from the December 21, 2007 date to incorporate these changes into the California MUTCD.

More information is available at the MUTCD home page at the following web link: http://mutcd.fhwa.dot.gov/

A Final Rule on Sign Retroreflectivity has been published in the Federal Register on December 21, 2007. This Final Rule adopts revisions to the current 2003 edition of the MUTCD. The revisions affect the MUTCD Introduction, Part 1, and Chapter 2A, plus minor editorial changes to cross-references in Chapters 2B and 6F. This set of revisions is Revision No. 2 to the 2003 edition of the MUTCD. The most current edition of the MUTCD is now the 2003 Edition with Revisions 1 and 2 incorporated.

The Federal Register notice of the Final Rule for Revision Number (No. 2) can be viewed at: http://mutcd.fhwa.dot.gov/res-notices.htm

For more information and background on Revision No. 2, please visit FHWA's Sign Retroreflectivity Web site at

http://safety.fhwa.dot.gov/roadway_dept/retro/sign/sign_retro.htm.

2. **Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb should is typically used. Guidance statements are sometimes modified by Options.**
3. **Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a Standard or Guidance. All Option statements are labeled, and the text appears in unbold type. The verb may is typically used.**
4. **Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs shall, should, and may are not used in Support statements.**

Support:

Throughout this Manual all dimensions and distances are provided in the International System of Units, a modernized version of the Metric system, and their English equivalent units are shown in parentheses.

Guidance:

Before laying out distances or determining sign sizes, the public agency should decide whether to use the International System of Units (Metric) or the English equivalent units. The chosen units should be specified on plan drawings. The chosen unit of measurement should be made known to those responsible for designing, installing, or maintaining traffic control devices.

Except when a specific numeral is required by the text of a Section of this Manual, numerals shown on the sign images in the figures that specify quantities such as times, distances, speed limits, and weights should be regarded as examples only. When installing any of these signs, the numerals should be appropriately altered to fit the specific signing situation.

Support:

The following information will be useful when reference is being made to a specific portion of text in this Manual.

There are ten Parts in this Manual and each Part is comprised of one or more Chapters. Each Chapter is comprised of one or more Sections. Parts are given a numerical identification, such as Part 2-Signs. Chapters are identified by the Part number and a letter, such as Chapter 2B-Regulatory Signs. Sections are identified by the Chapter number and letter followed by a decimal point and a number, such as Section 2B.03-Size of Regulatory Signs.

Each Section is comprised of one or more paragraphs. The paragraphs are indented but are not identified by a number or letter. Paragraphs are counted from the beginning of each Section without regard to the intervening text headings (Standard, Guidance, Option, or Support). Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase "Not less than 12 m (40 ft) beyond the stop line" that appears on Page 4D-12 of this Manual would be referenced in writing as "Section 4D.15, P7, D1(a)," and would be verbally referenced as "Item D1(a) of Paragraph 7 of Section 4D.15."

Standard:

In accordance with 23 CFR 655.603(b)(1), States or other Federal agencies that have their own MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial conformance with changes to the National MUTCD within 2 years of issuance of the changes. Unless a particular device is no longer serviceable, non-compliant devices on existing highways and bikeways shall be brought into compliance with the current edition of the National MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the Highway Safety Program, 23 U.S.C. § 402(a). In cases involving Federal-aid projects for new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the most recent edition of the National MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2)]. The FHWA has the authority to establish other target compliance dates for implementation of particular changes to the MUTCD [23 CFR 655.603(d)(4)]. These target compliance dates established by the FHWA shall be as follows:

Section 2A.09 Maintaining Minimum Retroreflectivity—new section—from the effective date of the Final Rule for Revision 2 of the 2003 MUTCD:

- **4 years for implementation and continued use of an assessment or management method that is designed to maintain traffic sign retroreflectivity at or above the established minimum levels;**
- **7 years for replacement of regulatory, warning, and ground-mounted guide (except street name) signs that are identified using the assessment or management method as failing to meet the established minimum levels; and** Rev. 2
- **10 years for replacement of street name signs and overhead guide signs that are identified using the assessment or management method as failing to meet the established minimum levels.**

Section 2A.19 Lateral Offset—crashworthiness of sign supports—January 17, 2013 for roads with posted speed limit of 80 km/h (50 mph) or higher.

Option:

A State may submit a request for interim approval for all jurisdictions in that State, as long as the request contains the information listed in the Guidance above.

Standard:

Once an interim approval is granted to any jurisdiction for a particular traffic control device or application, subsequent jurisdictions shall be granted interim approval for that device or application by submitting a letter to the FHWA Office of Transportation Operations indicating they will abide by Item F above and the specific conditions contained in the original interim approval.

A local jurisdiction using a traffic control device or application under an interim approval that was granted either directly to that jurisdiction or on a statewide basis based on the State's request shall inform the State of the locations of such use.

Support:

A diagram indicating the process for incorporating new traffic control devices into this Manual is shown in Figure 1A-2.

Procedures for revising this Manual are set out in the Federal Register of June 30, 1983 (48 FR 30145).

For additional information concerning interpretations, experimentation, changes, or interim approvals, write to the FHWA, 400 Seventh Street, SW, HOTO, Washington, DC 20590, or visit the MUTCD website at http://mutcd.fhwa.dot.gov.

Section 1A.11 Relation to Other Publications

Standard:

To the extent that they are incorporated by specific reference, the latest editions of the following publications, or those editions specifically noted, shall be a part of this Manual: "Standard Highway Signs" book (FHWA); and "Color Specifications for Retroreflective Sign and Pavement Marking Materials" (appendix to subpart F of Part 655 of Title 23 of the Code of Federal Regulations).

Support:

The "Standard Highway Signs" book includes standard alphabets and symbols for highway signs and pavement markings.

For information about the above publications, visit the Federal Highway Administration's MUTCD website at http://mutcd.fhwa.dot.gov, or write to the FHWA, 400 Seventh Street, SW, HOTO, Washington, DC 20590.

The publication entitled "Federal-Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes" is available at http://www.fhwa.dot.gov/operations/hovguide01.htm, or write to the FHWA, 400 Seventh Street, SW, HOTM, Washington, DC 20590.

The publication entitled "Maintaining Traffic Sign Retroreflectivity" (2007 Edition) is available at www.fhwa.dot.gov/retro, or write to the FHWA, 1200 New Jersey Avenue, SE, HSA-1, Washington, DC 20590. Rev.

Other publications that are useful sources of information with respect to use of this Manual are listed below. See Page i of this Manual for ordering information for the following publications:

1. "A Policy on Geometric Design of Highways and Streets," 2001 Edition (American Association of State Highway and Transportation Officials—AASHTO)
2. "Guide for the Development of Bicycle Facilities," 1999 Edition (AASHTO)
3. "Guide to Metric Conversion," 1993 Edition (AASHTO)
4. "Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to Freeways," 2001 Edition (AASHTO)
5. "List of Control Cities for Use in Guide Signs on Interstate Highways," 2001 Edition (AASHTO)
6. "Roadside Design Guide," 2001 Edition (AASHTO)
7. "Standard Specifications for Movable Highway Bridges," 1988 Edition (AASHTO)
8. "Traffic Engineering Metric Conversion Folders— Addendum to the Guide to Metric Conversion," 1993 Edition (AASHTO)
9. "2000 AREMA Communications & Signals Manual," American Railway Engineering & Maintenance-of-Way Association (AREMA)
10. "Designing Sidewalks and Trails for Access—Part 2—Best Practices Design Guide," 2001 Edition (FHWA) [Publication No. FHWA-EP-01-027]
11. "Practice for Roadway Lighting," RP-8, 2001, Illuminating Engineering Society (IES)
12. "Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Commercial Electric Detonators (Blasting Caps)," Safety Library Publication No. 20, Institute of Makers of Explosives
13. "American National Standard for High-Visibility Safety Apparel," (ANSI/ISEA 107-1999), 1999 Edition, ISEA - The Safety Equipment Association.
14. "Manual of Traffic Signal Design," 1998 Edition (Institute of Transportation Engineers—ITE)

Support:

Information regarding the use of retroreflective material on the sign support is contained in Section 2A.21.

Section 2A.09 Maintaining Minimum Retroreflectivity

Support:

Retroreflectivity is one of several factors associated with maintaining nighttime sign visibility (see Section 2A.22).

Standard:

Public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retroreflectivity at or above the minimum levels in Table 2A-3.

Support:

Compliance with the above Standard is achieved by having a method in place and using the method to maintain the minimum levels established in Table 2A-3. Provided that an assessment or management method is being used, an agency or official having jurisdiction would be in compliance with the above Standard even if there are some individual signs that do not meet the minimum retroreflectivity levels at a particular point in time.

Guidance:

Except for those signs specifically identified in the Option in this Section, one or more of the following assessment or management methods should be used to maintain sign retroreflectivity:

A. Visual Nighttime Inspection – The retroreflectivity of an existing sign is assessed by a trained sign inspector conducting a visual inspection from a moving vehicle during nighttime conditions. Signs that are visually identified by the inspector to have retroreflectivity below the minimum levels should be replaced.
B. Measured Sign Retroreflectivity – Sign retroreflectivity is measured using a retroreflectometer. Signs with retroreflectivity below the minimum levels should be replaced.
C. Expected Sign Life – When signs are installed, the installation date is labeled or recorded so that the age of a sign is known. The age of the sign is compared to the expected sign life. The expected sign life is based on the experience of sign retroreflectivity degradation in a geographic area compared to the minimum levels. Signs older than the expected life should be replaced. Rev. 2
D. Blanket Replacement – All signs in an area/corridor, or of a given type, should be replaced at specified intervals. This eliminates the need to assess retroreflectivity or track the life of individual signs. The replacement interval is based on the expected sign life, compared to the minimum levels, for the shortest-life material used on the affected signs.
E. Control Signs – Replacement of signs in the field is based on the performance of a sample of control signs. The control signs might be a small sample located in a maintenance yard or a sample of signs in the field. The control signs are monitored to determine the end of retroreflective life for the associated signs. All field signs represented by the control sample should be replaced before the retroreflectivity levels of the control sample reach the minimum levels.
F. Other Methods – Other methods developed based on engineering studies can be used.

Support:

Additional information about these methods is contained in the 2007 Edition of FHWA's "Maintaining Traffic Sign Retroreflectivity" (see Section 1A.11).

Option:

Highway agencies may exclude the following signs from the retroreflectivity maintenance guidelines described in this Section:

A. Parking, Standing, and Stopping signs (R7 and R8 series)
B. Walking/Hitchhiking/Crossing signs (R9 series, R10-1 through R10-4b)
C. Adopt-A-Highway signs
D. All signs with blue or brown backgrounds
E. Bikeway signs that are intended for exclusive use by bicyclists or pedestrians

Section 2A.10 Shapes

Standard:

Particular shapes, as shown in Table 2A-4, shall be used exclusively for specific signs or series of signs, unless specifically stated otherwise in the text discussion in this Manual for a particular sign or class of signs. Rev. 2

Section 2A.11 Sign Colors

Standard:

The colors to be used on standard signs and their specific use on these signs shall be as indicated in the applicable Sections of this Manual. The color coordinates and values shall be as described in 23 CFR, Part 655, Subpart F, Appendix.

*Table 2A-3. Minimum Maintained Retroreflectivity Levels*①

Sign Color	Sheeting Type (ASTM D4956-04)				Additional Criteria
	Beaded Sheeting			Prismatic Sheeting	
	I	II	III	III, IV, VI, VII, VIII, IX, X	
White on Green	W*; G ≥ 7	W*; G ≥ 15	W*; G ≥ 25	W ≥ 250; G ≥ 25	Overhead
	W*; G ≥ 7	W ≥ 120; G ≥ 15			Ground-mounted
Black on Yellow or Black on Orange	Y*; O*	Y ≥ 50; O ≥ 50			②
	Y*; O*	Y ≥ 75; O ≥ 75			③
White on Red	W ≥ 35; R ≥ 7				④
Black on White	W ≥ 50				–

① The minimum maintained retroreflectivity levels shown in this table are in units of cd/lx/m² measured at an observation angle of 0.2° and an entrance angle of -4.0°.
② For text and fine symbol signs measuring at least 1200 mm (48 in) and for all sizes of bold symbol signs
③ For text and fine symbol signs measuring less than 1200 mm (48 in)
④ Minimum Sign Contrast Ratio ≥ 3:1 (white retroreflectivity ÷ red retroreflectivity)
* This sheeting type should not be used for this color for this application.

Bold Symbol Signs

- W1-1, -2 – Turn and Curve
- W1-3, -4 – Reverse Turn and Curve
- W1-5 – Winding Road
- W1-6, -7 – Large Arrow
- W1-8 – Chevron
- W1-10 – Intersection in Curve
- W1-11 – Hairpin Curve
- W1-15 – 270 Degree Loop
- W2-1 – Cross Road
- W2-2, -3 – Side Road
- W2-4, -5 – T and Y Intersection
- W2-6 – Circular Intersection
- W3-1 – Stop Ahead
- W3-2 – Yield Ahead
- W3-3 – Signal Ahead
- W4-1 – Merge
- W4-2 – Lane Ends
- W4-3 – Added Lane
- W4-5 – Entering Roadway Merge
- W4-6 – Entering Roadway Added Lane
- W6-1, -2 – Divided Highway Begins and Ends
- W6-3 – Two-Way Traffic
- W10-1, -2, -3, -4, -11, -12 – Highway-Railroad Advance Warning
- W11-2 – Pedestrian Crossing
- W11-3 – Deer Crossing
- W11-4 – Cattle Crossing
- W11-5 – Farm Equipment
- W11-6 – Snowmobile Crossing
- W11-7 – Equestrian Crossing
- W11-8 – Fire Station
- W11-10 – Truck Crossing
- W12-1 – Double Arrow
- W16-5p, -6p, -7p – Pointing Arrow Plaques
- W20-7a – Flagger
- W21-1a – Worker

Fine Symbol Signs – Symbol signs not listed as Bold Symbol Signs.

Special Cases

- W3-1 – Stop Ahead: Red retroreflectivity ≥ 7
- W3-2 – Yield Ahead: Red retroreflectivity ≥ 7; White retroreflectivity ≥ 35
- W3-3 – Signal Ahead: Red retroreflectivity ≥ 7; Green retroreflectivity ≥ 7
- W3-5 – Speed Reduction: White retroreflectivity ≥ 50
- For non-diamond shaped signs such W14-3 (No Passing Zone), W4-4p (Cross Traffic Does Not Stop), or W13-1, -2, -3, -5 (Speed Advisory Plaques), use largest sign dimension to determine proper minimum retroreflectivity level.

Support:

2 As a quick reference, common uses of sign colors are shown in Table 2A-5. Color schemes on specific signs are shown in the illustrations located in each appropriate Section.

Whenever white is specified herein as a color, it is understood to include silver-colored retroreflective coatings or elements that reflect white light.

The colors coral, purple, and light blue are being reserved for uses that will be determined in the future by the Federal Highway Administration.

Information regarding color coding of destinations on guide signs is contained in Section 2D.03.

Option:

Where engineering judgment indicates a need to draw attention to the sign during nighttime conditions, a strip of retroreflective material may be used on regulatory and warning sign supports.

Standard:

If a strip of retroreflective material is used on the sign support, it shall be at least 50 mm (2 in) in width, it shall be placed for the full length of the support from the sign to within 0.6 m (2 ft) above the edge of the roadway, and its color shall match the background color of the sign, except that the color of the strip for the YIELD and DO NOT ENTER signs shall be red.

Section 2A.22 Maintenance

Guidance:

Maintenance activities should consider proper position, cleanliness, legibility, and daytime and nighttime visibility (see Section 2A.09). Damaged or deteriorated signs should be replaced. Rev. 2

To assure adequate maintenance, a schedule for inspecting (both day and night), cleaning, and replacing signs should be established. Employees of highway, law enforcement, and other public agencies whose duties require that they travel on the roadways should be encouraged to report any damaged, deteriorated, or obscured signs at the first opportunity.

Steps should be taken to see that weeds, trees, shrubbery, and construction, maintenance, and utility materials and equipment do not obscure the face of any sign.

A regular schedule of replacement of lighting elements for illuminated signs should be maintained.

Section 2A.23 Median Opening Treatments for Divided Highways with Wide Medians

Guidance:

Where divided highways are separated by median widths at the median opening itself of 9 m (30 ft) or more, median openings should be signed as two separate intersections.

08-22 Proposal to Amend CA MUTCD Sections 10C.15 and 10.23C (P70-72)

Municipal Transportation Agency

DATE: April 10, 2008

TO: Devinder Singh, Secretary
California Traffic Control Devices Committee

SPONSOR NAME: Bryant Woo, Associate Engineer, (415) 701-4561

PUBLIC AGENCY: San Francisco Municipal Transportation Agency

SUMMMARY: Adopt federal MUTCD language for California MUTCD Chapter 10 concerning warning signage and advance pavement markings for approaches to light-rail vehicle crossings.

BACKGROUND: Section 10C.23 of the California MUTCD requires that "Identical (RXR) markings shall be placed in each approach lane on all paved approaches to highway-light rail transit grade crossings." California MUTCD Section 10C.15 amends federal MUTCD guidance for warning signage citing CVC Section 21362.

DISUCSSION: We believe that the striping requirement in Section 10C.23 places a liability and financial burden on California agencies which is unnecessary given the existence of adequate federal language. The City and County of San Francisco has hundreds of highway approaches to light-rail, streetcar, and cable car crossings, nearly all of which are controlled by STOP signs or traffic signals. We believe that a STOP sign or traffic signal at a highway-light rail transit or cable car grade crossing provides better traffic control than pavement markings. Compliance with these requirements will result in excess pavement markings, which can lead to disrespect for traffic control devices where they are truly needed.

Concerning Section 10C.15, California Vehicle Code Section 21362 requires that "railroad warning approach signs shall be erected by local authorities upon the righthand side of each approach of every highway under their jurisdiction to a grade crossing of a railroad or electric interurban railway." This 1959 section addresses only "railroads" and "interurban" rail, even though it was legislated when there were a number of local streetcars operating in California cities. CVC 21362 appears to be silent on the signage requirements for the "intra-urban" rail vehicles that are the subject of Chapter 10, thus we do not believe it should be used to amend federal guidance in this case.

ATTACHMENTS**: None**

Proposal:

The request is to adopt the federal language with slightly addition of new text to Sections 10C.15 and 10C.23 of the California MUTCD as shown below:

Section 10C.15 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series)

Italic red color is additional text proposed by the City of SF)

Standard:

A Highway-Rail Grade Crossing Advance Warning (W10-1) sign (see Figure 10C-~~3~~-*4*) *with a supplemental plaque describing the type of traffic control at the highway-light rail transit grade crossing* shall be used on each highway in advance of every highway-light rail transit grade crossing in semiexclusive alignments except in the following circumstances:

A. On an approach to a highway-light rail transit grade crossing from a T-intersection with a parallel highway, if the distance from the edge of the track to the edge of the parallel roadway is less than 30 m (100 ft), and W10-3 signs are used on both approaches of the parallel highway; or

~~B. On low-volume, low-speed highways crossing minor spurs or other tracks that are infrequently used and are flagged by transit crews; or~~ ~~Refer to CVC 21362.~~

B. On low-volume, low-speed highways crossing minor spurs or other tracks that are infrequently used and are flagged by transit crews;

~~C. In business districts where active highway-light rail transit grade crossing traffic control devices are in use; or~~ ~~Refer to CVC 21362.~~

C. In business districts where active highway-light rail transit grade crossing traffic control devices are in use;

~~D. Where physical conditions do not permit even a partially effective display of the sign.~~ ~~Refer to CVC 21362.~~

D. Where physical conditions do not permit even a partially effective display of the sign.

Section 10C.23 Pavement Markings

Standard:

All highway-light rail transit grade crossing pavement markings shall be retroreflectorized white. All other markings shall be in accordance with Part 3.

***On paved roadways*, pavement markings in advance of a highway-light rail transit grade crossing shall consist of an X, the letters RR, a no-passing *zone* marking (*on* two-lane, *two-way* highways *with* ~~where~~ centerline markings *in compliance with Section 3B.01* ~~are used~~), and certain transverse lines as shown in Figures ~~10C-5~~ 10C-6 ~~8B-6(CA)~~ and ~~10C-6~~ 10C-7 ~~8B-7(CA).~~**

~~Identical markings shall be placed in each approach lane on all paved approaches to highway-light rail transit grade crossings where signals or automatic gates are located, and at all other highway-light rail transit grade crossings where the posted or statutory highway speed is 60 km/h (40 mph) or greater.~~

Identical markings shall be placed in each approach lane on all paved approaches to highway-light rail transit grade crossings where signals or automatic gates are located, and at all other highway-light rail transit grade crossings where the posted or statutory highway speed is 60 km/h (40 mph) or greater.

~~Pavement markings shall not be required at highway-light rail transit grade crossings where the posted or statutory highway speed is less than 60 km/h (40 mph). In urban areas, pavement markings shall not be required at highway-light rail transit grade crossings if an engineering study indicates that other installed devices provide suitable warning and control.~~

Pavement markings shall not be required at highway-light rail transit grade crossings where the posted or statutory highway speed is less than 60 km/h (40 mph)~~.~~ ~~or~~ ~~I~~in urban areas, ***pavement markings shall not be required at highway-light rail transit grade crossing*** **if an engineering study indicates that other installed devices provide suitable warning and control.**

Identical (RXR) markings shall be placed in each approach lane on all paved approaches to highway-light rail transit grade crossings.

Guidance:

~~When pavement markings are used, a portion of the X symbol should be directly opposite the Advance Warning sign. The X symbol and letters should be elongated to allow for the low angle at which they will be viewed.~~

Figures 8B-6(CA) and 8B-7(CA) should be used for X symbol and letters details.

Option:

When justified by engineering judgment, supplemental pavement marking symbol(s) may be placed between the Advance Warning sign and the highway-light rail transit grade crossing.

Pavement markings and no-passing zone markings may be omitted at exempt highway-light rail transit grade crossings as provided in CVC 22452 and 22452.5.

Pavement (RXR) markings may be omitted where the distance between a cross street and a railroad is less than 15 m (50ft).

08-23 Worker Visibility (P73-76)

FHWA published the final rule on worker visibility in the Federal Register on November 24, 2006 and it becomes effective November 24, 2008 for workers who are working within the rights-of-way of Federal-aid highways.

This document is available at the following web link:
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2006_register&docid=E6-19910.pdf

Please be aware that on purpose this final rule by FHWA amends the Title 23 of the CFR (Code of Federal Regulations) and not the MUTCD (see excerpts below). The intent is that this rule be applicable to only workers whose duties place them on or in close proximity to Federal-aid highways. The MUTCD is applicable to all streets and highways open to the public, which is much broader than the requirement in SAFETEA–LU upon which this rule is based.

FHWA is proposing in the next revision to the MUTCD, the ANSI 107-2004 high-visibility safety apparel. However, the proposed NPA to the MUTCD is currently open for public comment through July 31, 2008. When FHWA issues a final rule for this revision, likely sometime in 2009, then Caltrans will look at adopting this rule for all public roadways in California within 2 years of the issuance of the final rule.

The proposed NPA is available at the following web links:
http://a257.g.akamaitech.net/7/257/2422/01jan20081800/edocket.access.gpo.gov/2008/pdf/E7-24863.pdf
http://mutcd.fhwa.dot.gov/resources/proposed_amend/index.htm

The dilemma being imposed by these FHWA actions is that the ANSI 107-2004 high-visibility safety apparel requirements will be applicable to workers who are working within the rights-of-way of Federal-aid highways as of November 24, 2008 whereas the current MUTCD and CA MUTCD will continue to require only ANSI 107-1999 requirements until they are updated later, sometime in 2009 (for MUTCD) and possibly 2010 (for CA MUTCD). Caltrans is proposing that the CA MUTCD be revised prior to November 24, 2008 as per the proposed revision to the MUTCD 2009, which reflects the incorporation of these ANSI 107-2004 requirements.

Following is FHWA's proposed change to the next edition of the MUTCD to incorporate this final rule:

Section 1A.11 Relation to Other Publications

14. "American National Standard for High-Visibility Safety Apparel and Headwear," added to improve accuracy (ANSI/ISEA ~~107-1999~~ 107-2004), ~~1999~~ 2004 Edition~~.~~ (ISEA) ~~The Safety Equipment Association~~ edited to increase consistency

Section 6D.03 Worker Safety Considerations

~~techniques, device usage, and placement.~~

~~B. Worker Safety Apparel – all workers exposed to the risks of moving roadway traffic or construction equipment should wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High Visibility Safety Apparel" (see Section 1A.11), or equivalent revisions, and labeled as ANSI 107-1999 standard performance for Class 1, 2, or 3 risk exposure. A competent person designated by the employer to be responsible for the worker safety plan within the activity area of the job site should make the selection of the appropriate class of garment.~~ replaced by Standard below

Standard:

All workers within the right-of-way who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the TTC zone shall wear high-visibility safety apparel that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2004 publication entitled "American National Standard for High-Visibility Safety Apparel and Headwear" (see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. A person designated by the employer to be responsible for the worker safety plan shall make the selection of the appropriate class of garment. When uniformed law enforcement personnel are used to direct traffic, to investigate crashes, or to handle lane closures, obstructed roadways, and disasters, safety apparel as described in this Section shall be worn by the law enforcement personnel.

Option:

Emergency and incident responders and law enforcement personnel within the TTC zone may wear high-visibility safety apparel that meets the performance requirements of the ANSI/ISEA 207-2006 publication entitled "American National Standard for High-Visibility Public Safety Vests" (see Section 1A.11), or equivalent revisions, and labeled as ANSI 207-2006, in lieu of ANSI/ISEA 107-2004 apparel.

Section 6E.02 High-Visibility Safety Apparel

Standard:

For daytime and nighttime activity, flaggers shall wear high-visibility safety apparel ~~meeting~~ that meets the Performance Class 2 or 3 requirements of the ANSI/ISEA 107–2004 publication entitled "American National Standard for High-Visibility Apparel and Headwear" (see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI ~~107-1999~~ 107-2004 standard performance for Class 2 or 3 risk exposure. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard. The retroreflective material shall be ~~either~~ grammar – more than two choices orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

Guidance:

For nighttime activity, high-visibility safety apparel ~~meeting~~ that meets the Performance Class 3 requirements of the ANSI/ISEA 107–2004 publication entitled "American National Standard for High-Visibility Apparel and Headwear" (see Section 1A.11), or equivalent revisions, and labeled as meeting the ANSI ~~107-1999~~ 107-2004 standard performance for Class 3 risk exposure should be considered for flagger wear ~~(instead of the Class 2 safety apparel in the Standard above)~~.

Standard:

When uniformed law enforcement officers are used to direct traffic within a TTC zone, they shall wear high-visibility safety apparel as described in this Section ~~should be worn by the law enforcement officer~~.

Option:

Law enforcement personnel within the TTC zone may wear high-visibility safety apparel that meets the performance requirements of the ANSI/ISEA 207-2006 publication entitled "American National Standard for High-Visibility Public Safety Vests" (see Section 1A.11), or equivalent revisions, and labeled as ANSI 207-2006, in lieu of ANSI/ISEA 107-2004 apparel.

Section ~~7E.04~~ 7D.04 Uniform of Adult Crossing Guards ~~and Student Patrols~~

~~**Guidance:**~~

~~Adult crossing guards should be uniformed so that road users and pedestrians can recognize them and respond to their signals. The uniforms should be distinctively different from those worn by regular law enforcement officers.~~

Standard:

Law enforcement officers performing school crossing supervision and adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI ~~107-1999~~ 107-2004 standard performance for Class 2 as described in Section 6E.02.

~~Student patrols shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-1999 standard performance for Class 1 as described in Section 6E.02.~~

~~**Guidance:**~~

~~Law enforcement officers should wear high-visibility retroreflective material over their uniforms when directing nighttime operations.~~

Following are some excerpts from the final rule, as published in the Federal register on November 24, 2006:

§ 634.3 Rule.
All workers within the right-of-way of a Federal-aid highway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction equipment within the work area shall wear high-visibility safety apparel.

§ 634.2 Definitions.
Close proximity means within the highway right-of-way on Federal-aid highways.
High-visibility safety apparel means personal protective safety clothing that is intended to provide conspicuity during both daytime and nighttime usage, and that meets the Performance Class 2 or 3 requirements of the ANSI/ ISEA 107–2004 publication entitled ‘‘American National Standard for High-Visibility Safety Apparel and Headwear.’’

§ 634.4 Compliance date.
States and other agencies shall comply with the provisions of this Part no later than November 24, 2008.

Summary:
Pursuant to Section 1402 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU), this final rule establishes a policy for the use of high-visibility safety apparel. The FHWA establishes a new Part in title 23, Code of Federal Regulations (CFR) that requires the use of high-visibility safety apparel and provides guidance on its application. This rulemaking applies only to workers who are working within the rights-of-way of Federal-aid highways. The FHWA is taking this action to decrease the likelihood of fatalities or injuries to workers on foot who are exposed either to traffic (vehicles using the highway for purposes of travel) or to construction vehicles or equipment while working within the rights-of-way of Federal-aid highways.

Background:
High visibility is one of the most prominent needs for workers who must perform tasks near moving vehicles or equipment. The need to be seen by those who drive or operate vehicles or equipment is recognized as a critical issue for worker safety. The sooner a worker in or near the path of travel is seen, the more time the operator has to avoid an incident. The FHWA recognized this fact and included language in the 2000 Edition of the Manual on Uniform Traffic Control Devices (MUTCD) 1 to

address this issue. This text in the 2000 MUTCD led some agencies to adopt policies and specifications requiring workers to wear high-visibility vests or shirts on their highway projects. The American National Standards Institute (ANSI) also released ANSI 107–1999,2 a standard for high visibility garments.

The FHWA recognized the need for a more specific recommendation and included language to that effect in the 2003 Edition of the MUTCD. As a result of the text in the 2003 MUTCD, many agencies have revised their policies to require their employees to wear ANSI Class 2 safety apparel at all times and they are revising their specifications to require contractors' employees to wear compliant safety apparel also. Although the text was made more specific in the 2003 MUTCD, it was still a recommendation rather than a requirement and some agencies have, therefore, not incorporated the use of high-visibility safety apparel into their policies and contract documents.

Discussion of Comments Regarding Application to All Highways:

This rule is merely implementing Section 1402 of SAFETEA–LU, which directed the Secretary of Transportation to issue regulations to decrease the likelihood of worker injury and maintain the free flow of vehicular traffic by requiring workers whose duties placed them on or in close proximity to a Federal-aid highway to wear high-visibility apparel. A revision to the MUTCD would be the appropriate process for extending this requirement to all roads. This would require a separate rulemaking effort. The FHWA will consider these comments as part of the process for proposing amendments to the next edition of the MUTCD.

FHWA Action:

The FHWA adds a new part to the CFR to implement this statutory requirement. The FHWA adds a new part to Title 23, CFR that requires workers whose duties place them on or in close proximity to a Federal-aid highway to wear high-visibility safety apparel rather than to include such a requirement in the MUTCD. The FHWA is also considering whether to propose to include these requirements in the next edition of the MUTCD. Although the MUTCD is incorporated by reference at 23 CFR 655.601(a), it applies to all streets and highways open to the public, which is much broader than the requirement in SAFETEA–LU, which applies only to workers whose duties place them on or in close proximity to Federal-aid highways.

8 Information Items

06-8 FHWA's Interim Approval for Optional Use of Flashing Yellow Arrow, Traffic Control Devices

The Sub-committee is holding one-on-one discussion via teleconferences with individual agencies and members through May 20, 2008 and will submit their report to the Committee on May 29, 2008 during the CTCDC meeting.